

PMID- 26375386
OWN - NLM
STAT- In-Data-Review
DA - 20151007
IS - 1944-8252 (Electronic)
IS - 1944-8244 (Linking)
VI - 7
IP - 39
DP - 2015 Oct 7
TI - Improved Icephobic Properties on Surfaces with a Hydrophilic Lubricating Liquid.
PG - 22067-77
LID - 10.1021/acsami.5b07265 [doi]
AB - Slippery liquid-infused porous surfaces were developed recently for icephobic surface applications. Perfluorinated liquids, silicone oil, hydrocarbon, and water were used as lubricating liquids to form a continuous layer on a suitable substrate to prevent icing. However, ice accretion performances of these surfaces have not been reported previously depending on the type of the lubricant. In this work, fluorinated aliphatics, polyalphaolefin, silicone oil, and decamethylcyclopenta siloxane were used as hydrophobic lubricants; water, ethylene glycol, formamide, and water-glycerine mixture were used as hydrophilic lubricants to be impregnated by hydrophobic polypropylene and hydrophilic cellulose-based filter paper surfaces; ice accretion, drop freezing delay time, and ice adhesion strength properties of these surfaces were examined; and the results were compared to those of the reference surfaces such as aluminum, copper, polypropylene, and polytetrafluoroethylene. An ice accretion test method was also developed to investigate the increase of the mass of formed ice gravimetrically by spraying supercooled water onto these surfaces at different subzero temperatures ranging between -1 and -5 degrees C. It was determined that hydrophilic solvents (especially a water-glycerine mixture) that impregnated hydrophilic porous surfaces would be a promising candidate for anti-icing applications at -2 degrees C and 56-83% relative humidity because ice accretion and ice adhesion strength properties of these surface decreased simultaneously in these conditions.
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LA - eng
PT - Journal Article

DEP - 20150924
 PL - United States
 TA - ACS Appl Mater Interfaces
 JT - ACS applied materials & interfaces
 JID - 101504991
 SB - IM
 OTO - NOTNLM
 OT - SLIPS
 OT - anti-icing
 OT - contact angle
 OT - drop freezing time
 OT - ice accretion
 OT - ice adhesion
 OT - icephobic
 EDAT- 2015/09/17 06:00
 MHDA- 2015/09/17 06:00
 CRDT- 2015/09/17 06:00
 PHST- 2015/09/24 [aheadofprint]
 AID - 10.1021/acsami.5b07265 [doi]
 PST - ppublish
 SO - ACS Appl Mater Interfaces. 2015 Oct 7;7(39):22067-77. doi:
 10.1021/acsami.5b07265. Epub 2015 Sep 24.

 PMID- 26268465
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150910
 IS - 1521-3773 (Electronic)
 IS - 1433-7851 (Linking)
 VI - 54
 IP - 38
 DP - 2015 Sep 14
 TI - Selective Synthesis of Single- and Multi-Walled Supramolecular Nanotubes by Using
 Solvophobic/Solvophilic Controls: Stepwise Radial Growth via "Coil-on-Tube"
 Intermediates.
 PG - 11168-72
 LID - 10.1002/anie.201505806 [doi]
 AB - Novel hexa-peri-hexabenzocoronene (HBC) derivatives, (F) HBC and (F) HBC*, which
 carry perfluoroalkyl segments on one side of the HBC core and long alkyl tails on
 the other, were synthesized. Their perfluoroalkyl segments are highly solvated in
 C6 F6 (solvophilic effect) and do not assemble, whereas in CH2 Cl2 , they are
 excluded (solvophobic effect) and assemble together consequently. For example,
 the use of C6 F6 and CH2 Cl2 as assembling media for (F) HBC leads to the
 selective formation of single- and multi-walled nanotubes, respectively. When a
 higher monomer concentration is applied in CH2 Cl2 , multi-walled nanotubes with
 a larger number of walls result. (F) HBC in CH2 Cl2 self-assembles rather slowly,
 thereby allowing for the observation of coil-on-tube structures, which are
 possible intermediates for the stepwise radial growth of the nanotubular wall.

Casting of the multi-walled nanotubes onto a quartz plate yields a superhydrophobic thin film with a water contact angle of 161 ± 2 degrees .

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LA - eng

PT - Journal Article

DEP - 20150812

PL - Germany

TA - Angew Chem Int Ed Engl

JT - Angewandte Chemie (International ed. in English)

JID - 0370543

SB - IM

OTO - NOTNLM

OT - electron microscopy

OT - helical structures

OT - nanostructures

OT - nanotube

OT - self-assembly

EDAT- 2015/08/14 06:00

MHDA- 2015/08/14 06:00

CRDT- 2015/08/14 06:00

PHST- 2015/06/24 [received]

PHST- 2015/08/12 [aheadofprint]

AID - 10.1002/anie.201505806 [doi]

PST - ppublish

SO - Angew Chem Int Ed Engl. 2015 Sep 14;54(38):11168-72. doi: 10.1002/anie.201505806.
Epub 2015 Aug 12.

PMID- 25092180

OWN - NLM

STAT- In-Data-Review

DA - 20150828

IS - 1432-0738 (Electronic)

IS - 0340-5761 (Linking)

VI - 89

IP - 9

DP - 2015 Sep

TI - Activation of sterol regulatory element-binding proteins in mice exposed to perfluorooctanoic acid for 28 days.

PG - 1569-78

LID - 10.1007/s00204-014-1322-7 [doi]

AB - Perfluoroalkyl acids are widely used in numerous industrial and commercial applications due to their unique physical and chemical characteristics. Although perfluorooctanoic acid (PFOA) is associated with hepatomegaly through peroxisome proliferator-activated receptor alpha (PPARalpha) activation, liver fat accumulation and changes in gene expression related to fatty acid metabolism could still be found in PPARalpha-null mice exposed to PFOA. To explore the potential effects of PFOA on sterol regulatory element-binding proteins (SREBPs) activity, male mice were dosed with either Milli-Q water or PFOA at doses of 0.08, 0.31, 1.25, 5, and 20 mg/kg/day by gavage for 28 days. Liver total cholesterol concentrations and PFOA contents showed a dose-dependent decrease and increase, respectively. Transcriptional activity of PPARalpha and SREBPs was significantly enhanced in livers. Protein expression analyzed by Western blotting showed that PFOA exposure stimulated SREBP maturation. Furthermore, proteins blocked SREBP precursor transport, insulin-induced gene 1 (INSIG1) and INSIG2 proteins, as well as a protein-mediated nuclear SREBP proteolysis, F-box and WD-40 domain protein 7, decreased in mouse liver exposed to PFOA. The expression levels of the miR-183-96-182 cluster, which is possibly involved in a regulatory loop intermediated by SREBPs maturation, were also increased in the mouse liver after PFOA exposure. We also observed that PFOA induced lipid content and PPARalpha in Hepa 1-6 cells after exposure to PFOA for 72 h but SREBPs were not activated in vitro. These results demonstrated that SREBPs were matured by activating the miR-183-96-182 cluster-SREBP regulatory loop in PFOA-exposed mouse liver.

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LA - eng
 PT - Journal Article
 DEP - 20140806
 PL - Germany
 TA - Arch Toxicol
 JT - Archives of toxicology
 JID - 0417615
 SB - IM
 EDAT- 2014/08/06 06:00
 MHDA- 2014/08/06 06:00
 CRDT- 2014/08/06 06:00
 PHST- 2014/04/10 [received]
 PHST- 2014/07/21 [accepted]
 PHST- 2014/08/06 [aheadofprint]
 AID - 10.1007/s00204-014-1322-7 [doi]
 PST - ppublish
 SO - Arch Toxicol. 2015 Sep;89(9):1569-78. doi: 10.1007/s00204-014-1322-7. Epub 2014 Aug 6.

 PMID- 26358646
 OWN - NLM
 STAT- In-Data-Review
 DA - 20151017
 IS - 1432-0800 (Electronic)
 IS - 0007-4861 (Linking)
 VI - 95
 IP - 5
 DP - 2015 Nov
 TI - Interspecific and Spatial Comparisons of Perfluorinated Compounds in Bighead and Silver Carp in the Illinois River, Illinois, USA.
 PG - 561-6
 LID - 10.1007/s00128-015-1646-x [doi]
 AB - We examined perfluoroalkyl compounds (PFC) in bighead (BHCP; *Hypophthalmichthys nobilis*) and silver (SVCP; *H. molitrix*) carp from the Illinois River, Illinois, USA. Summed PFC concentrations in whole fish did not differ by species or river reach. Perfluorooctanesulfonate (PFOS) concentrations were much greater in whole fish (16.4 ng/g) than in fillets (3.4 ng/g). PFOS concentrations represented 35 %-51 % of total measured PFC concentrations in whole fish, and in fillets were weakly associated with carcass mass ($R(2) = 0.17$, $p = 0.01$) and % carcass lipid ($R(2) = 0.16$, $p = 0.01$). No such relationship was observed in whole fish. The relationship between concentrations of individual PFC congeners in whole fish and carcass mass or % lipid content varied by species. Our study demonstrated that filter-feeders such as BHCP and SVCP can accumulate measureable concentrations of PFC and these results are important for understanding the fate of these compounds in large river systems.
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LA - eng

PT - Journal Article

DEP - 20150910

PL - United States

TA - Bull Environ Contam Toxicol

JT - Bulletin of environmental contamination and toxicology

JID - 0046021

SB - IM

OTO - NOTNLM

OT - Carp

OT - Hypophthalmichthys

OT - Illinois River

OT - PFOS

OT - Perfluorinated compounds

EDAT- 2015/09/12 06:00

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CRDT- 2015/09/12 06:00

PHST- 2015/02/05 [received]

PHST- 2015/09/02 [accepted]

PHST- 2015/09/10 [aheadofprint]

AID - 10.1007/s00128-015-1646-x [doi]

AID - 10.1007/s00128-015-1646-x [pii]

PST - ppublish

SO - Bull Environ Contam Toxicol. 2015 Nov;95(5):561-6. doi:
10.1007/s00128-015-1646-x. Epub 2015 Sep 10.

PMID- 26331633

OWN - NLM

STAT- In-Data-Review

DA - 20150911

IS - 1521-3765 (Electronic)

IS - 0947-6539 (Linking)

VI - 21
 IP - 39
 DP - 2015 Sep 21
 TI - Multiple Multidentate Halogen Bonding in Solution, in the Solid State, and in the
 (Calculated) Gas Phase.
 PG - 13625-36
 LID - 10.1002/chem.201502043 [doi]
 AB - The binding properties of neutral halogen-bond donors (XB donors) bearing two
 multidentate Lewis acidic motifs toward halides were investigated. Employing
 polyfluorinated and polyiodinated terphenyl and quaterphenyl derivatives as anion
 receptors, we obtained X-ray crystallographic data of the adducts of three
 structurally related XB donors with tetraalkylammonium chloride, bromide, and
 iodide. The stability of these XB complexes in solution was determined by
 isothermal titration calorimetry (ITC), and the results were compared to X-ray
 analyses as well as to calculated binding patterns in the gas phase. Density
 functional theory (DFT) calculations on the gas-phase complexes indicated that
 the experimentally observed distortion of the XB donors during multiple
 multidentate binding can be reproduced in 1:1 complexes with halides, whereas
 adducts with two halides show a symmetric binding pattern in the gas phase that
 is markedly different from the solid state structures. Overall, this study
 demonstrates the limitations in the transferability of binding data between solid
 state, solution, and gas phase in the study of complex multidentate XB donors.
 CI - (c) 2015 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.
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LA - eng

PT - Journal Article

DEP - 20150902

PL - Germany

TA - Chemistry

JT - Chemistry (Weinheim an der Bergstrasse, Germany)

JID - 9513783

SB - IM

OTO - NOTNLM

OT - anions

OT - halogen compounds

OT - molecular recognition

OT - noncovalent interactions

OT - thermodynamics

EDAT- 2015/09/04 06:00

MHDA- 2015/09/04 06:00

CRDT- 2015/09/03 06:00

PHST- 2015/05/25 [received]

PHST- 2015/09/02 [aheadofprint]

AID - 10.1002/chem.201502043 [doi]

PST - ppublish

SO - Chemistry. 2015 Sep 21;21(39):13625-36. doi: 10.1002/chem.201502043. Epub 2015 Sep 2.

PMID- 26190176

OWN - NLM

STAT- In-Data-Review

DA - 20150828

IS - 1860-7187 (Electronic)

IS - 1860-7179 (Linking)

VI - 10

IP - 9

DP - 2015 Sep

TI - Anticancer Organometallic Osmium(II)-p-cymene Complexes.

PG - 1539-47

LID - 10.1002/cmdc.201500221 [doi]

AB - Osmium compounds are attracting increasing attention as potential anticancer drugs. In this context, a series of bifunctional organometallic osmium(II)-p-cymene complexes functionalized with alkyl or perfluoroalkyl groups were prepared and screened for their antiproliferative activity. Three compounds from the series display selectivity toward cancer cells, with moderate cytotoxicity observed against human ovarian carcinoma (A2780) cells, whereas no cytotoxicity was observed on non-cancerous human embryonic kidney (HEK-293) cells and human endothelial (ECRF24) cells. Two of these three cancer-cell-selective compounds induce cell death largely via apoptosis and were also found to disrupt vascularization in the chicken embryo chorioallantoic membrane (CAM) model. Based on these promising properties, these compounds have potential clinical

applications.

CI - (c) 2015 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

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LA - eng

PT - Journal Article

DEP - 20150714

PL - Germany

TA - ChemMedChem

JT - ChemMedChem

JID - 101259013

SB - IM

OTO - NOTNLM

OT - antitumor agents

OT - bioorganometallic chemistry

OT - chorioallantoic membrane model

OT - osmium complexes

EDAT- 2015/07/21 06:00

MHDA- 2015/07/21 06:00

CRDT- 2015/07/21 06:00

PHST- 2015/05/19 [received]

PHST- 2015/07/14 [aheadofprint]

AID - 10.1002/cmdc.201500221 [doi]

PST - ppublish

SO - ChemMedChem. 2015 Sep;10(9):1539-47. doi: 10.1002/cmdc.201500221. Epub 2015 Jul 14.

PMID- 26350897

OWN - NLM

STAT- Publisher

DA - 20150909

LR - 20150910

IS - 1879-1298 (Electronic)

IS - 0045-6535 (Linking)

DP - 2015 Sep 5

TI - Influence of oxic/anoxic condition on sorption behavior of PFOS in sediment.

LID - S0045-6535(15)30068-0 [pii]

LID - 10.1016/j.chemosphere.2015.08.068 [doi]

AB - Sediment components and redox properties change with oxic/anoxic condition, which affect the environmental transport of perfluorooctane sulfonate (PFOS). Herein, the influence of oxic/anoxic condition on the variation of redox and residual components of sediments, where organic matter, iron and manganese oxides are separated from the original sediment collected from Lake Taihu, China, are investigated. Meanwhile, the distinguishing sorption behaviors of PFOS on various residual sediments under oxic and anoxic condition are studied. Sediment after extracting iron and manganese (S-FeMn), which possessed the highest organic carbon (0.99%), had the highest affinity for PFOS under oxic condition. However, anoxic environment resulted in an increase of the pH, dissolving of organic carbon and de-protonation of S-FeMn, which caused the lower sorption capacity of PFOS on S-FeMn. Sediment after extracting manganese (S-Mn) had the higher sorption ability in anoxic environment because the Fe²⁺ from S-Mn provided more effective electrostatic sites for anionic PFOS. When the environment changed to oxic condition, the iron existed as trivalent form in S-Mn, which resulted in a block of effective sorption site and reduced the sorption amounts of PFOS. The higher percentage of manganese oxides restrained the sorption of PFOS. Hence, whether or not oxic/anoxic condition promoted the PFOS sorption depended on both the percentage and form of various components in the sediment. The study generated further insight into the environmental transport of PFOS in the sediments with different properties and the wetland system, where oxic/anoxic subsurface flow was constructed.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150905

TA - Chemosphere

JT - Chemosphere

JID - 0320657

OTO - NOTNLM

OT - Anoxic environment

OT - Oxic condition

OT - PFOS

OT - Sediment components

OT - Sorption

EDAT- 2015/09/10 06:00

MHDA- 2015/09/10 06:00

CRDT- 2015/09/10 06:00

PHST- 2015/05/11 [received]

PHST- 2015/08/12 [revised]

PHST- 2015/08/22 [accepted]

AID - S0045-6535(15)30068-0 [pii]

AID - 10.1016/j.chemosphere.2015.08.068 [doi]

PST - aheadofprint

SO - Chemosphere. 2015 Sep 5. pii: S0045-6535(15)30068-0. doi:
10.1016/j.chemosphere.2015.08.068.

PMID- 26414740

OWN - NLM

STAT- Publisher

DA - 20150928

LR - 20150929

IS - 1879-1298 (Electronic)

IS - 0045-6535 (Linking)

VI - 144

DP - 2015 Sep 25

TI - A large-scale model for simulating the fate & transport of organic contaminants
in river basins.

PG - 803-810

LID - S0045-6535(15)30138-7 [pii]

LID - 10.1016/j.chemosphere.2015.09.051 [doi]

AB - We present STREAM-EU (Spatially and Temporally Resolved Exposure Assessment Model
for EUropean basins), a novel dynamic mass balance model for predicting the
environmental fate of organic contaminants in river basins. STREAM-EU goes beyond
the current state-of-the-science in that it can simulate spatially and
temporally-resolved contaminant concentrations in all relevant environmental
media (surface water, groundwater, snow, soil and sediments) at the river basin
scale. The model can currently be applied to multiple organic contaminants in any
river basin in Europe, but the model framework is adaptable to any river basin in

any continent. We simulate the environmental fate of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) in the Danube River basin and compare model predictions to recent monitoring data. The model predicts PFOS and PFOA concentrations that agree well with measured concentrations for large stretches of the river. Disagreements between the model predictions and measurements in some river sections are shown to be useful indicators of unknown contamination sources to the river basin.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150925

TA - Chemosphere

JT - Chemosphere

JID - 0320657

OTO - NOTNLM

OT - Fate & transport model

OT - Organic contaminants

OT - PFOA

OT - PFOS

OT - River basins

EDAT- 2015/09/29 06:00

MHDA- 2015/09/29 06:00

CRDT- 2015/09/29 06:00

PHST- 2015/06/24 [received]

PHST- 2015/09/11 [revised]

PHST- 2015/09/12 [accepted]

AID - S0045-6535(15)30138-7 [pii]

AID - 10.1016/j.chemosphere.2015.09.051 [doi]

PST - aheadofprint

SO - Chemosphere. 2015 Sep 25;144:803-810. doi: 10.1016/j.chemosphere.2015.09.051.

PMID- 25989522

OWN - NLM

STAT- In-Process

DA - 20150606

IS - 1879-1298 (Electronic)

IS - 0045-6535 (Linking)

VI - 134

DP - 2015 Sep

TI - Residual perfluorochemicals in the biochar from sewage sludge.

PG - 435-7

LID - 10.1016/j.chemosphere.2015.05.012 [doi]

LID - S0045-6535(15)00470-1 [pii]

AB - Biochar has been recently considered as a candidate for soil amendment and soil remediation. Some pollutants have been screened in the biochar for safety purposes except for perfluorochemicals (PFCs). In this study, the contamination of biochars from plant residues and sewage sludge with perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) was examined. The total residual concentrations of PFOA and PFOS in the sludge biochar were 15.8-16.9 ng/g and these values did not decrease significantly after pyrolysis. On the other hand, these PFCs were not found in the biochar from plant sources. In conclusion, the use of the sludge biochar in the agricultural environment should be re-evaluated, since the concentrations of PFCs in the sewage sludge showed no significant decrease after thermal process.

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LA - eng

PT - Journal Article

PT - Research Support, Non-U.S. Gov't

DEP - 20150515

PL - England

TA - Chemosphere

JT - Chemosphere

JID - 0320657

SB - IM

OTO - NOTNLM

OT - Biochar

OT - Perfluorooctanesulfonic acid (PFOS)

OT - Perfluorooctanoic acid (PFOA)

OT - Sludge
EDAT- 2015/05/20 06:00
MHDA- 2015/05/20 06:00
CRDT- 2015/05/20 06:00
PHST- 2015/02/23 [received]
PHST- 2015/04/20 [revised]
PHST- 2015/05/02 [accepted]
PHST- 2015/05/15 [aheadofprint]
AID - S0045-6535(15)00470-1 [pii]
AID - 10.1016/j.chemosphere.2015.05.012 [doi]
PST - ppublish
SO - Chemosphere. 2015 Sep;134:435-7. doi: 10.1016/j.chemosphere.2015.05.012. Epub 2015 May 15.

PMID- 25981317
OWN - NLM
STAT- In-Process
DA - 20150606
IS - 1879-1298 (Electronic)
IS - 0045-6535 (Linking)
VI - 134
DP - 2015 Sep
TI - Estimation of the total concentration of perfluoroalkyl acids (PFAA) in human serum: Data from NHANES 2005-2012.
PG - 387-94
LID - 10.1016/j.chemosphere.2015.04.104 [doi]
LID - S0045-6535(15)00474-9 [pii]
AB - While selected perfluoroalkyl acids/substances (PFAAs) like perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS) have been detected and measured in laboratory, a method to estimate the total concentration of PFAAs (summation operatorPFAA) in serum has not been developed. Because of the health concerns associated with PFAAs and because of the inability of every laboratory to measure every PFAA as well as because of the non-availability of sensitive enough equipment to be able to detect very small amounts of certain PFAAs, it is of interest to know summation operatorPFAA. We used data from the National Health and Nutrition Examination Survey for the years 2005-2012 to develop regression models to estimate summation operatorPFAA by using the levels of PFOA and PFOS only. While data for 2005-2008 were used to develop regression models, data for 2009-2012 were used to evaluate the accuracy of the developed models. Over 63% of observed values for evaluation data were found to be within 10% of the predicted values. The model so developed can be used with just the knowledge of the age, gender, and concentrations of PFOA and PFOS. While the data used to develop the model were generated in U.S., the model can be used to estimate summation operatorPFAA for data collected in North America and Europe and probably elsewhere in the world.
CI - Copyright (c) 2015 Elsevier Ltd. All rights reserved.
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 LA - eng
 PT - Journal Article
 PT - Research Support, U.S. Gov't, Non-P.H.S.
 DEP - 20150515
 PL - England
 TA - Chemosphere
 JT - Chemosphere
 JID - 0320657
 SB - IM
 OTO - NOTNLM
 OT - Perfluorooctane sulfonate
 OT - Perfluorooctanoate
 OT - Regression methods
 EDAT- 2015/05/20 06:00
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 PHST- 2015/03/06 [received]
 PHST- 2015/04/29 [revised]
 PHST- 2015/04/30 [accepted]
 PHST- 2015/05/15 [aheadofprint]
 AID - S0045-6535(15)00474-9 [pii]
 AID - 10.1016/j.chemosphere.2015.04.104 [doi]
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 SO - Chemosphere. 2015 Sep;134:387-94. doi: 10.1016/j.chemosphere.2015.04.104. Epub 2015 May 15.

 PMID- 25966457
 OWN - NLM
 STAT- In-Process
 DA - 20150606
 IS - 1879-1298 (Electronic)
 IS - 0045-6535 (Linking)
 VI - 134
 DP - 2015 Sep
 TI - Molecular dynamics simulations of structural transformation of perfluorooctane sulfonate (PFOS) at water/rutile interfaces.
 PG - 272-8
 LID - 10.1016/j.chemosphere.2015.04.056 [doi]
 LID - S0045-6535(15)00395-1 [pii]
 AB - Concentration and salinity conditions are the dominant environmental factors affecting the behavior of perfluorinated compounds (PFCs) on the surfaces of a variety of solid matrices (suspended particles, sediments, and natural minerals). However, the mechanism has not yet been examined at molecular scales. Here, the structural transformation of perfluorooctane sulfonate (PFOS) at water/rutile interfaces induced by changes of the concentration level of PFOS and salt condition was investigated using molecular dynamics (MD) simulations. At low and intermediate concentrations all PFOS molecules directly interacted with the

rutile (110) surface mainly by the sulfonate headgroups through electrostatic attraction, yielding a typical monolayer structure. As the concentration of PFOS increased, the molecules aggregated in a complex multi-layered structure, where an irregular assembling configuration was adsorbed on the monolayer structure by the van der Waals interactions between the perfluoroalkyl chains. When adding CaCl_2 to the system, the multi-layered structure changed to a monolayer again, indicating that the addition of CaCl_2 enhanced the critical concentration value to yield PFOS multilayer assemblies. The divalent $\text{Ca}(2+)$ substituted for monovalent $\text{K}(+)$ as the bridging counterion in PFOS adsorption. MD simulation may trigger wide applications in study of perfluorinated compounds (PFCs) from atomic/molecular scale.

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LA - eng

PT - Journal Article

PT - Research Support, Non-U.S. Gov't

DEP - 20150515

PL - England

TA - Chemosphere

JT - Chemosphere

JID - 0320657

SB - IM

OTO - NOTNLM

OT - Assembling structure

OT - Concentration effect

OT - Environmental factors

OT - Interfacial behavior

OT - Perfluorinated compounds

OT - Salinity effect

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 SO - Chemosphere. 2015 Sep;134:272-8. doi: 10.1016/j.chemosphere.2015.04.056. Epub 2015 May 15.

 PMID- 25958252
 OWN - NLM
 STAT- In-Process
 DA - 20150606
 IS - 1879-1298 (Electronic)
 IS - 0045-6535 (Linking)
 VI - 134
 DP - 2015 Sep
 TI - The potential role of biochar in the removal of organic and microbial contaminants from potable and reuse water: A review.
 PG - 232-40
 LID - 10.1016/j.chemosphere.2015.03.072 [doi]
 LID - S0045-6535(15)00316-1 [pii]
 AB - In this work, the potential benefits, economics, and challenges of applying biochar in water treatment operations to remove organic and microbial contaminants was reviewed. Minimizing the use of relatively more expensive traditional sorbents in water treatment is a motivating aspect of biochar production, e.g., \$246/ton non-activated biochar to \$1500/ton activated carbon. Biochar can remove organic contaminants in water, such as some pesticides (0.02-23 mg g⁽⁻¹⁾), pharmaceutical and personal care products (0.001-59 mg g⁽⁻¹⁾), dyes (2-104 mg g⁽⁻¹⁾), humic acid (60 mg g⁽⁻¹⁾), perfluorooctane sulfonate (164 mg g⁽⁻¹⁾), and N-nitrosomodimethylamine (3 mg g⁽⁻¹⁾). Including adsorption/filtration applications, biochar can potentially be used to inactivate *Escherichia coli* via disinfection, and transform 95% of 2-chlorobiphenyl via advanced oxidation processes. However, more sorption data using biochar especially at demonstration-scale, for treating potable and reuse water in adsorption/filtration applications will help establish the potential of biochars to serve as surrogates for activated carbons.
 CI - Copyright (c) 2015 Elsevier Ltd. All rights reserved.
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LA - eng

PT - Journal Article

PT - Review

DEP - 20150515

PL - England

TA - Chemosphere

JT - Chemosphere

JID - 0320657

SB - IM

OTO - NOTNLM

OT - Biochar

OT - Microbial

OT - Organic contaminant

OT - Treatment

OT - Water

EDAT- 2015/05/11 06:00

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AID - S0045-6535(15)00316-1 [pii]

AID - 10.1016/j.chemosphere.2015.03.072 [doi]

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SO - Chemosphere. 2015 Sep;134:232-40. doi: 10.1016/j.chemosphere.2015.03.072. Epub
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OWN - NLM

STAT- In-Process

DA - 20150606

IS - 1879-1298 (Electronic)

IS - 0045-6535 (Linking)

VI - 134

DP - 2015 Sep

TI - OH radical-initiated oxidation degradation and atmospheric lifetime of
N-ethylperfluorobutyramide in the presence of O(2)/NOx.

PG - 241-9

LID - 10.1016/j.chemosphere.2015.04.059 [doi]

LID - S0045-6535(15)00398-7 [pii]

AB - The OH radical-initiated oxidation degradation of N-ethylperfluorobutyramide
(EtFBA) in the presence of O2/NOx was investigated theoretically by using density
functional theory (DFT). All possible pathways involved in the oxidation process
were presented and discussed. The study shows that the H abstraction from the
C(2)H(2) group in EtFBA is the most energetically favorable because of the lowest

barrier and highest exothermicity. Canonical variational transition-state (CVT) theory with small curvature tunneling (SCT) contribution was used to predict the rate constants over the temperature range of 180–370 K. At 296 K, the calculated overall rate constant of EtFBA with OH radicals is $2.50 \times 10^{-12} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$. The atmospheric lifetime of EtFBA determined by OH radicals is short, about 4.6 days at 296 K. However, the atmospheric lifetimes of its primary oxidation products, $\text{C}_3\text{F}_7\text{C}(\text{O})\text{N}(\text{H})\text{C}(\text{O})\text{CH}_3$, $\text{C}_3\text{F}_7\text{C}(\text{O})\text{N}(\text{H})\text{CH}_2\text{CHO}$ and $\text{C}_3\text{F}_7\text{C}(\text{O})\text{NH}_2$, are much longer, about 30–50 days. It demonstrates the possibility that the atmospheric oxidation degradation of polyfluorinated amides (PFAMs) contributes to the burden of observed perfluorinated pollutants in the Arctic region. This study reveals for the first time that the water molecule plays an important catalytic effect on several key elementary steps and promotes the degradation potential of EtFBA.

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LA - eng

PT - Journal Article

PT - Research Support, Non-U.S. Gov't

DEP - 20150515

PL - England

TA - Chemosphere

JT - Chemosphere

JID - 0320657

SB - IM

OTO - NOTNLM

OT - Atmospheric lifetime

OT - Kinetic parameters

OT - N-ethylperfluorobutyramide

OT - OH radicals

OT - Oxidation degradation

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 AID - 10.1016/j.chemosphere.2015.04.059 [doi]
 PST - ppublish
 SO - Chemosphere. 2015 Sep;134:241-9. doi: 10.1016/j.chemosphere.2015.04.059. Epub 2015 May 15.

PMID- 26340371
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150917
 IS - 1879-1298 (Electronic)
 IS - 0045-6535 (Linking)
 VI - 139
 DP - 2015 Nov
 TI - Neutral polyfluorinated compounds in indoor air in Germany - The LUPE 4 study.
 PG - 572-8
 LID - 10.1016/j.chemosphere.2015.07.024 [doi]
 LID - S0045-6535(15)00744-4 [pii]
 AB - Perfluoroalkyl- and polyfluoroalkyl-substances (PFAS) have been detected in many types of environmental media and biota including humans. We determined volatile PFAS, including fluorotelomer alcohols (FTOHs), fluorotelomer acrylates (FTACs), perfluorooctane sulfonamides (FOSAs), and perfluorooctane sulfonamidoethanols (FOSEs), in indoor air of residences and schools in Germany. FTOHs, FTACs, FOSEs, and FOSAs were quantified with median levels in schools (in residences) of 11,783pg/m(3) (13,198pg/m(3)), 737pg/m(3) (450pg/m(3)), 130pg/m(3) (278pg/m(3)), and 243pg/m(3) (110pg/m(3)), respectively. Using our data and previously published results in a simplified model based on the medians and 95th percentiles, the "typical" and "high" daily non-dietary exposures were calculated to be 4.2ng/kg body weight (9.9ng/kgb.w.) for Sigma-FTOHs and 0.1ng/kgb.w. (0.8ng/kgb.w.) for Sigma-FOSEs/FOSAs in children. Inhalation was the dominant intake pathway for FTOHs; however, dust ingestion contributed significantly to the total intake of FOSEs/FOSAs. In organisms, 8:2 FTOH is degraded to perfluorooctanoate (PFOA). Assuming that 1% of 8:2 FTOH is converted to PFOA, 8:2 FTOH exposure in Germany has a negligible contribution to the total daily PFOA exposure, which is mainly driven by dietary intake.

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LA - eng
PT - Journal Article
DEP - 20150901
PL - England
TA - Chemosphere
JT - Chemosphere
JID - 0320657
SB - IM
OTO - NOTNLM
OT - Exposure
OT - FOSE
OT - FTOH
OT - Indoor air
OT - PFAS
OT - Polyfluorinated compounds
EDAT- 2015/09/05 06:00
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AID - S0045-6535(15)00744-4 [pii]
AID - 10.1016/j.chemosphere.2015.07.024 [doi]
PST - ppublish
SO - Chemosphere. 2015 Nov;139:572-8. doi: 10.1016/j.chemosphere.2015.07.024. Epub 2015 Sep 1.

PMID- 26330949
OWN - NLM
STAT- In-Data-Review
DA - 20150902

LR - 20150905
IS - 2005-4408 (Electronic)
IS - 2005-291X (Linking)
VI - 7
IP - 3
DP - 2015 Sep
TI - Comparison of the Sliding and Femoral Head Rotation among Three Different Femoral Head Fixation Devices for Trochanteric Fractures.
PG - 291-7
LID - 10.4055/cios.2015.7.3.291 [doi]
AB - BACKGROUND: Recently, various femoral head fixation devices (HFDs) for trochanteric fractures have become available. However, there are some cases in which femoral head rotation with excessive sliding of the HFD is observed and it is often followed by cutout. The purpose of this study is to compare the ability of the three types of HFDs to prevent femoral head rotation. METHODS: Between July 2005 and December 2009, 206 patients aged over 60 years with trochanteric fractures who had undergone surgical treatment using a short femoral nail in our institution were enrolled into the study. We used the gamma 3 nail (GMN) as the screw-type HFD in 66 cases, the gliding nail (GLN) as a non-cylindrical blade in 76 cases, and the proximal femoral nail antirotation (PFNA) as a cylindrical blade in 64 cases. The sliding length of HFDs and the occurrence of femoral head rotation were evaluated by assessing radiographs as the main outcome, and the results were compared among these devices. RESULTS: A comparison of the degree of sliding in the GMN group showed that femoral head rotation was observed significantly more frequently in cases with rotation. Further, it appeared that femoral head rotation occurred more frequently in comminuted fractures. However, no significant differences between the sliding lengths of the different HFDs were observed among three groups. Femoral head rotation was observed in 15 cases of GMN (22.7%), 0 case of GLN, and 5 case of PFNA (7.8%). Significant differences with regard to the occurrence of femoral head rotation were observed among the three groups. Furthermore, significant differences were also observed between GLN and PFNA with respect to the occurrence of femoral head rotation. CONCLUSIONS: The ability to stabilize femoral head appears to be greater with blade-type materials than with screw-type materials. Furthermore, we believe that a non-cylindrical blade is preferable to a cylindrical blade for the surgical treatment of comminuted, unstable trochanteric fractures in order to prevent femoral head rotation and cut-out.
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 LA - eng
 PT - Journal Article
 DEP - 20150813
 PL - Korea (South)
 TA - Clin Orthop Surg
 JT - Clinics in orthopedic surgery
 JID - 101505087
 SB - IM
 PMC - PMC4553275
 OID - NLM: PMC4553275
 OTO - NOTNLM
 OT - Femur head
 OT - Hip fractures
 OT - Orthopedic fixation devices
 OT - Postoperative complication
 EDAT- 2015/09/04 06:00
 MHDA- 2015/09/04 06:00
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 PHST- 2014/05/01 [received]
 PHST- 2015/04/26 [accepted]
 PHST- 2015/08/13 [epublish]
 AID - 10.4055/cios.2015.7.3.291 [doi]
 PST - ppublish
 SO - Clin Orthop Surg. 2015 Sep;7(3):291-7. doi: 10.4055/cios.2015.7.3.291. Epub 2015
 Aug 13.

 PMID- 26341623
 OWN - NLM
 STAT- Publisher
 DA - 20150905
 LR - 20150914
 IS - 2196-5412 (Electronic)
 DP - 2015 Sep 4

TI - Cumulative Chemical Exposures During Pregnancy and Early Development.

AB - Industrial and consumer product chemicals are widely used, leading to ubiquitous human exposure to the most common classes. Because these chemicals may affect developmental milestones, exposures in pregnant women and developing fetuses are of particular interest. In this review, we discuss the prevalence of chemical exposures in pregnant women, the chemical class-specific relationships between maternal and fetal exposures, and the major sources of exposures for six chemical classes of concern: phthalates, phenols, perfluorinated compounds (PFCs), flame retardants, polychlorinated biphenyls (PCBs), and organochlorine pesticides (OCs). Additionally, we describe the current efforts to characterize cumulative exposures to synthetic chemicals during pregnancy. We conclude by highlighting gaps in the literature and discussing possible applications of the findings to reduce the prevalence of cumulative exposures during pregnancy.

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LA - ENG

GR - R00 ES019881/ES/NIEHS NIH HHS/United States

PT - JOURNAL ARTICLE

DEP - 20150904

TA - Curr Environ Health Rep

JT - Current environmental health reports

JID - 101629387

EDAT- 2015/09/06 06:00

MHDA- 2015/09/06 06:00

CRDT- 2015/09/06 06:00

AID - 10.1007/s40572-015-0064-x [doi]

PST - aheadofprint

SO - Curr Environ Health Rep. 2015 Sep 4.

PMID- 26403844

OWN - NLM

STAT- Publisher

DA - 20150925

LR - 20150926

IS - 2196-5412 (Electronic)

DP - 2015 Sep 24

TI - Maternal Exposure to Synthetic Chemicals and Obesity in the Offspring: Recent Findings.

AB - Experimental studies suggest perinatal exposures to synthetic chemicals may be associated with early onset obesity, although this hypothesis has not been extensively examined in humans. This article summarizes the evidence relating

maternal perinatal exposure to common persistent organic compounds (polychlorinated biphenyl, dichlorodiphenyldichloroethylene, dichlorodiphenyltrichloroethane, hexachlorobenzene, hexachlorocyclohexane), perfluoroalkyls, perfluorooctane sulfonate, polybrominated diphenyl ethers and tributyltin, and nonpersistent compounds (phthalates, bisphenol A) on child obesity during sensitive developmental periods. Twenty-two epidemiologic studies published from 2011 to 2015 offer inconsistent support for the obesogenic effects of most substances and are limited by relatively small sample sizes and indirect measures of adiposity. The clearest findings suggest an influence of maternal dichlorodiphenyldichloroethylene exposure on offspring overweight and obesity. Recommendations for future epidemiological research include longer follow-up of effects of pre- and postnatal exposures in large samples; utilization of direct measures of adiposity; and consideration of effect modification by sex, birth weight, dietary fat, and maternal weight status.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150924

TA - Curr Environ Health Rep

JT - Current environmental health reports

JID - 101629387

OTO - NOTNLM

OT - Child

OT - Environmental obesogen

OT - Infant growth

OT - Maternal exposure

OT - Obesity

OT - Overweight

OT - Weight gain

EDAT- 2015/09/26 06:00

MHDA- 2015/09/26 06:00

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AID - 10.1007/s40572-015-0068-6 [doi]

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PST - aheadofprint

SO - Curr Environ Health Rep. 2015 Sep 24.

PMID- 26374142

OWN - NLM

STAT- Publisher

DA - 20150916

LR - 20150917

IS - 1477-9234 (Electronic)

IS - 1477-9226 (Linking)

DP - 2015 Sep 16

TI - Transition metal complexes bearing NHC ligands substituted with secondary polyfluoroalkyl groups.

AB - Using three different approaches, racemic 1-(perfluoroalkyl)ethylamines were synthesized from perfluoroalkyl iodides or perfluoroalkanoic acids, and further transformed to the corresponding N,N'-disubstituted ethane-1,2-diimines and ethane-1,2-diamines as mixtures of diastereoisomers. Their cyclization afforded imidazolium or dihydroimidazolium salts, which led to silver or palladium complexes bearing NHC ligands substituted with secondary polyfluoroalkyl groups. The palladium complexes bearing a throwaway 3-chloropyridine ligand proved to be moderately active in the model Suzuki-Miyaura coupling.

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AU - Brezinova A

FAU - Kvicala, J

AU - Kvicala J

LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150916

TA - Dalton Trans

JT - Dalton transactions (Cambridge, England : 2003)

JID - 101176026

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MHDA- 2015/09/17 06:00

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AID - 10.1039/c5dt02258d [doi]

PST - aheadofprint

SO - Dalton Trans. 2015 Sep 16.

PMID- 26279579

OWN - NLM

STAT- In-Data-Review

DA - 20150902

IS - 1477-9234 (Electronic)

IS - 1477-9226 (Linking)

VI - 44

IP - 36

DP - 2015 Sep 1

TI - Tuning of the excitation wavelength in Eu(3+)-aminophenyl based polyfluorinated beta-diketonate complexes: a red-emitting Eu(3+)-complex encapsulated in a silica/polymer hybrid material excited by blue light.

PG - 15924-37

LID - 10.1039/c5dt02371h [doi]

AB - We describe herein the synthesis, characterization and photophysical properties of a series of europium complexes based on three aminophenyl based polyfluorinated beta-diketonates, namely, 1-(4-aminophenyl)-4,4,5,5,5-pentafluoro-3-hydroxypent-2-en-1-one, 1-(4-(dimethylamino)phenyl)-4,4,5,5,5-pentafluoro-3-hydroxypent-2-en-1-one and 1-(4-(diphenylamino)phenyl)-4,4,5,5,5-pentafluoro-3-hydroxypent-2-en-1-one, and an ancillary ligand, 4,5-bis(diphenylphosphino)-9,9-dimethylxanthene oxide. The results demonstrated that the triphenylamine based polyfluorinated Eu(3+)-beta-diketonate complexes dramatically red-shifted the excitation maximum to the visible region ($\lambda_{\text{max}} = 400 \text{ nm}$) with an impressive quantum yield (40%) as compared to the simple Eu(3+)-aminophenyl-beta-diketonate complexes ($\lambda_{\text{max}} = 370 \text{ nm}$). This can be explained on the basis of the conjugation between nitrogen lone pair electrons and the phenyl pi-electrons in the beta-diketonate ligand system. On the other hand, the electron-donating dimethylamino group (Hammett constant: $\sigma_{\text{p}} = -0.83$) containing Eu(3+)-beta-diketonate complexes moderately shifted the excitation maximum in the UV region from 370 to 380 nm as compared to unsubstituted aminophenyl (Hammett constant: $\sigma_{\text{p}} = -0.66$) Eu(3+) complexes. The displacement of water molecules in aminophenyl based Eu(3+)-beta-diketonate binary complexes by a rigid phosphine oxide ligand richly enhances the photoluminescence quantum yields as well as the excited state lifetime values of the corresponding ternary complexes. As an integral part of this work, hybrid materials have been developed through a sol-gel route by encapsulating a ternary Eu(3+) compound in a silica/polymer hybrid for high performance luminescence applications. In addition, a bright red-emitting diode was fabricated by coating the designed hybrid material onto a 400 nm emitting InGaN chip and the photoluminescence was examined. Notably, the current study clearly shows that the developed triphenylamine based Eu(3+)-beta-diketonate complex is an interesting red-emitting material excited by blue light and therefore may find potential applications in the fields of biological and materials science.

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FAU - Reddy, M L P

AU - Reddy ML
LA - eng
PT - Journal Article
PL - England
TA - Dalton Trans
JT - Dalton transactions (Cambridge, England : 2003)
JID - 101176026
SB - IM
EDAT- 2015/08/19 06:00
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AID - 10.1039/c5dt02371h [doi]
PST - ppublish
SO - Dalton Trans. 2015 Sep 1;44(36):15924-37. doi: 10.1039/c5dt02371h.

PMID- 26415070
OWN - NLM
STAT- In-Data-Review
DA - 20150929
IS - 1833-3516 (Print)
IS - 1833-3516 (Linking)
VI - 45
IP - 3
DP - 2015 Sep
TI - Does self-certification reflect the cardiac health of UK sport divers?
PG - 184-9
AB - BACKGROUND: Since 2009, the United Kingdom diving incident data show an increasing number of fatalities in the over-50s age group. Previous studies also suggest some divers take cardiac medications. Since 2001, diving medicals have not been mandatory for UK sport divers. Instead, an annual medical self-certification form, submitted to their club/school or training establishment, is required. We documented in a survey of UK sport divers the prevalence of cardiac events and medications and the frequency of medical certifications. METHODS: An anonymous on-line questionnaire was publicised. Measures included diver and diving demographics, prescribed medications, diagnosed hypertension, cardiac issues, events and procedures, other health issues, year of last diving medical, diagnosed persistent foramen ovale (PFO), smoking and alcohol habits, exercise and body mass index. RESULTS: Of 672 completed surveys, hypertension was reported by 119 (18%) with 25 of these (21%) having not had a diving medical. Myocardial infarction 6 (1%), coronary artery bypass grafting 3 (< 1%), atrial fibrillation 19 (3%) and angina 12 (2%) were also reported. PFOs were reported by 28 (4%), with 20 of these opting for a closure procedure. From 83 treated incidences of decompression illness (DCI), 19 divers reported that a PFO was diagnosed. CONCLUSIONS: Divers inevitably develop health problems. Some continue to dive with cardiac issues, failing to seek specialised diving advice or fully understand the role of the diving medical. Physicians without appropriate training in diving medicine may inform a diver they are safe to continue diving with their condition without appreciating the

potential risks. The current procedure for medical screening for fitness to dive may not be adequate for all divers.

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LA - eng

PT - Journal Article

PL - Australia

TA - Diving Hyperb Med

JT - Diving and hyperbaric medicine

JID - 101282742

SB - IM

OTO - NOTNLM

OT - Health surveys

OT - cardiovascular

OT - fitness to dive

OT - medicals - diving

OT - recreational divers

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SO - Diving Hyperb Med. 2015 Sep;45(3):184-9.

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STAT- In-Process

DA - 20150617

IS - 1873-6750 (Electronic)

IS - 0160-4120 (Linking)

VI - 82

DP - 2015 Sep

TI - Can the observed association between serum perfluoroalkyl substances and delayed menarche be explained on the basis of puberty-related changes in physiology and pharmacokinetics?

PG - 61-8

LID - 10.1016/j.envint.2015.05.006 [doi]

LID - S0160-4120(15)00119-1 [pii]

AB - BACKGROUND: An association between serum levels of two perfluoroalkyl substances (PFAS) and delayed age at menarche was reported in a cross-sectional study of adolescents. Because perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) have half-lives of years, growth dilution and the development of a new route of excretion (menstruation) could account for some or all of the reported association. OBJECTIVES: To assess how much of the epidemiologic association between PFAS and delayed menarche can be explained by the correlation of growth and maturation with PFAS body burden. METHODS: We developed a Monte Carlo (MC) physiologically-based pharmacokinetic (PBPK) model of PFAS to simulate plasma PFAS levels in a hypothetical female population aged 2 to 20years old. Realistic distributions of physiological parameters as well as timing of growth spurts and menarche were incorporated in the model. The association between PFAS level and delayed menarche in the simulated data was compared with the reported association. RESULTS: The prevalence of menarche, distributions of age-dependent physiological parameters, and quartiles of serum PFAS concentrations in the simulated subjects were comparable to those reported in the epidemiologic study. The delay of menarche in days per natural log increase in PFAS concentrations in the simulated data were about one third as large as the observed values. CONCLUSION: The reported relationship between PFAS and age at menarche appears to be at least partly explained by pharmacokinetics rather than a toxic effect of these substances.

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 LA - eng
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 PT - Research Support, Non-U.S. Gov't
 DEP - 20150529
 PL - Netherlands
 TA - Environ Int
 JT - Environment international
 JID - 7807270
 SB - IM
 OTO - NOTNLM
 OT - Environmental exposure
 OT - Female
 OT - Menarche
 OT - PBPK
 OT - PFOA
 OT - PFOS
 EDAT- 2015/06/05 06:00
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 AID - 10.1016/j.envint.2015.05.006 [doi]
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 SO - Environ Int. 2015 Sep;82:61-8. doi: 10.1016/j.envint.2015.05.006. Epub 2015 May 29.

 PMID- 26010307
 OWN - NLM
 STAT- In-Process
 DA - 20150617
 LR - 20150708
 IS - 1873-6750 (Electronic)
 IS - 0160-4120 (Linking)
 VI - 82
 DP - 2015 Sep
 TI - Prenatal exposures to perfluoroalkyl acids and serum lipids at ages 7 and 15 in females.
 PG - 49-60
 LID - 10.1016/j.envint.2015.05.001 [doi]
 LID - S0160-4120(15)00107-5 [pii]
 AB - BACKGROUND: In some cross-sectional epidemiologic studies the shape of the association between serum concentrations of perfluoroalkyl acids (PFAAs) and lipids suggests departures from linearity. OBJECTIVES: We used statistical approaches allowing for non-linearity to determine associations of prenatal

exposures of perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) with lipid concentrations. METHODS: PFAAs were measured in serum from pregnant women collected in 1991-1992 at enrollment in the Avon Longitudinal Study of Parents and Children and lipids in serum from their daughters at ages 7 (n=111) and 15 (n=88). The associations of PFAAs with lipids were first explored by cubic splines, followed by piecewise linear regressions by tertiles to obtain regression coefficients (beta) and their 95% confidence limits (95% CL) (in mg/dL per lng/mL). RESULTS: At age 7, total cholesterol was positively associated with prenatal PFOA concentrations in the lower tertile (beta=15.01; 95% CL=2.34, 27.69) but not with PFOA concentrations in the middle (beta=-3.63; 95% CL=-17.43, 10.16) and upper (beta=-1.58; 95% CL=-4.58, 1.42) tertiles. At age 15, a similar pattern was noted as well. Positive associations between LDL-C and prenatal PFOA concentration in the lower tertile were observed in daughters at ages 7 (beta=14.91; 95% CL=3.53, 28.12) and 15 (beta=13.93; 95% CL=0.60, 27.26). LDL-C was not associated with PFOA concentrations in the middle or upper tertile at any age. Neither HDL-C nor triglycerides was associated with prenatal PFOA exposure. Non-linear patterns of association of total cholesterol and LDL-C with prenatal PFOS were less consistently noted. CONCLUSION: Exposure to low levels of PFOA during prenatal development may alter lipid metabolism later in life. Given the small sample size further replication of the association in large independent cohorts is important.

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GR - 092731/Wellcome Trust/United Kingdom

GR - Medical Research Council/United Kingdom

PT - Journal Article

PT - Research Support, Non-U.S. Gov't

DEP - 20150523

PL - Netherlands

TA - Environ Int

JT - Environment international
JID - 7807270
SB - IM
OTO - NOTNLM
OT - ALSPAC
OT - Endocrine disruption
OT - Fetal origins of adult disease
OT - Lipid metabolism
OT - PFOA
OT - PFOS
OT - Perfluoroalkyl acids
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AID - S0160-4120(15)00107-5 [pii]
AID - 10.1016/j.envint.2015.05.001 [doi]
PST - ppublish
SO - Environ Int. 2015 Sep;82:49-60. doi: 10.1016/j.envint.2015.05.001. Epub 2015 May 23.

PMID- 26001497
OWN - NLM
STAT- In-Process
DA - 20150617
IS - 1873-6750 (Electronic)
IS - 0160-4120 (Linking)
VI - 82
DP - 2015 Sep
TI - Elevated levels of PFOS and PFHxS in firefighters exposed to aqueous film forming foam (AFFF).
PG - 28-34
LID - 10.1016/j.envint.2015.05.005 [doi]
LID - S0160-4120(15)00111-7 [pii]
AB - Exposure to aqueous film forming foam (AFFF) was evaluated in 149 firefighters working at AFFF training facilities in Australia by analysis of PFOS and related compounds in serum. A questionnaire was designed to capture information about basic demographic factors, lifestyle factors and potential occupational exposure (such as work history and self-reported skin contact with foam). The results showed that a number of factors were associated with PFAA serum concentrations. Blood donation was found to be linked to low PFAA levels, and the concentrations of PFOS and PFHxS were found to be positively associated with years of jobs with AFFF contact. The highest levels of PFOS and PFHxS were one order of magnitude higher compared to the general population in Australia and Canada. Study participants who had worked ten years or less had levels of PFOS that were

similar to or only slightly above those of the general population. This coincides with the phase out of 3M AFFF from all training facilities in 2003, and suggests that the exposures to PFOS and PFHxS in AFFF have declined in recent years. Self-reporting of skin contact and frequency of contact were used as an index of exposure. Using this index, there was no relationship between PFOS levels and skin exposure. This index of exposure is limited as it relies on self-report and it only considers skin exposure to AFFF, and does not capture other routes of potential exposure. Possible associations between serum PFAA concentrations and five biochemical outcomes were assessed. The outcomes were serum cholesterol, triglycerides, high-density lipoproteins, low density lipoproteins, and uric acid. No statistical associations between any of these endpoints and serum PFAA concentrations were observed.

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LA - eng

PT - Journal Article

PT - Research Support, Non-U.S. Gov't

DEP - 20150522

PL - Netherlands

TA - Environ Int

JT - Environment international

JID - 7807270

SB - IM

OTO - NOTNLM

OT - Aqueous film-forming foam (AFFF)

OT - Biomarkers

OT - Firefighters

OT - Perfluoroalkyl acids (PFAA)
 OT - Serum
 EDAT- 2015/05/24 06:00
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 PHST- 2015/05/22 [aheadofprint]
 AID - S0160-4120(15)00111-7 [pii]
 AID - 10.1016/j.envint.2015.05.005 [doi]
 PST - ppublish
 SO - Environ Int. 2015 Sep;82:28-34. doi: 10.1016/j.envint.2015.05.005. Epub 2015 May 22.

 PMID- 26001496
 OWN - NLM
 STAT- In-Process
 DA - 20150617
 IS - 1873-6750 (Electronic)
 IS - 0160-4120 (Linking)
 VI - 82
 DP - 2015 Sep
 TI - Perfluoroalkyl substances (PFAS) including structural PFOS isomers in plasma from elderly men and women from Sweden: Results from the Prospective Investigation of the Vasculature in Uppsala Seniors (PIVUS).
 PG - 21-7
 LID - 10.1016/j.envint.2015.05.003 [doi]
 LID - S0160-4120(15)00109-9 [pii]
 AB - Per- and polyfluoroalkyl substances (PFASs) are a class of compounds with unique chemical properties that have been shown useful in a wide variety of applications because they provide materials with reduced surface tension and exceptional non-stick properties. PFASs are commonly found in impregnation materials, coatings of papers and textiles, fire-fighting foams, pesticides, and cleaning agents. The potential for human exposure to PFASs is high because of their widespread distribution. The aim of this study was to investigate levels of PFASs in men and women from Sweden and to assess the influence of gender and parity among women. Levels of 13 PFASs were determined in plasma samples collected during 2001-2004 from 1016 (507 women) 70year-old participants from the population-based Prospective Study of the Vasculature in Uppsala Seniors (PIVUS). The PFASs studied were nine perfluorinated carboxylic acids (PFCAs), four perfluorinated sulfonic acids (PFSA) and perfluorooctane sulfonamide (PFOSA). In addition, structural isomers of perfluorooctane sulfonic acid (PFOS) were determined in a subset of 398 individuals. The detection rates were high and the majority of the studied compounds were detected in more than 75% of the participants. Levels of the selected analytes were found to be similar to other studies of non-occupationally exposed populations. Gender differences were observed in levels of PFHpA which was higher in men, while PFHxS was higher in

women. Parity among women was shown to have a minor effect on PFAS concentrations and we found primi- and multiparous women to have slightly lower levels of PFUnDA when compared to nulliparous women.

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LA - eng

PT - Journal Article

PT - Research Support, Non-U.S. Gov't

DEP - 20150522

PL - Netherlands

TA - Environ Int

JT - Environment international

JID - 7807270

SB - IM

OTO - NOTNLM

OT - Biomonitoring

OT - Gender

OT - Human plasma

OT - PFOA

OT - PFOS

OT - Perfluoroalkyl substances

OT - Structural isomers

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 PHST- 2014/11/25 [received]
 PHST- 2015/04/28 [revised]
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 AID - S0160-4120(15)00109-9 [pii]
 AID - 10.1016/j.envint.2015.05.003 [doi]
 PST - ppublish
 SO - Environ Int. 2015 Sep;82:21-7. doi: 10.1016/j.envint.2015.05.003. Epub 2015 May 22.

 PMID- 26341502
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150907
 IS - 1573-2959 (Electronic)
 IS - 0167-6369 (Linking)
 VI - 187
 IP - 10
 DP - 2015 Oct
 TI - Assessment on the distribution and partitioning of perfluorinated compounds in the water and sediment of Nansi Lake, China.
 PG - 4831
 LID - 10.1007/s10661-015-4831-9 [doi]
 AB - In this study, the distribution and partitioning of nine perfluorinated compounds (PFCs) in the water and sediment of Nansi Lake were systematically investigated. The total concentration of PFCs was in the range of 38.4-91.4 ng/L in the water and 0.47-1.81 ng/g in the sediment. The concentration of perfluorooctanoic acid (PFOA) was the highest in all the homologues in the water and was in the range of 34.9-84.6 ng/L. However, perfluorooctane sulfonate (PFOS), PFOA, and perfluoroundecanoic acid (PFUnDA) were the predominant PFCs in the sediment, and their levels were similar. The levels of PFOA, PFHpA, PFOS, PFNA, and the total PFCs in the water were relatively higher in the upper region than those in the lower region of Nansi Lake. In the sediment, the levels of PFOA, PFOS, and PFUnDA showed the similar distribution tendency. Industrial wastewater discharged from the cities around Nansi Lake was the main sources of PFCs. The partitioning coefficients (K_d) of PFOA, PFNA, PFDA, and PFOS were in the range of 0.29-0.87, 1.43-2.18, 2.08-3.15, and 2.20-2.80, respectively. Therefore, the log K_d of PFDA and PFOS was apparently high as compared to two other compounds. The organic matter content of the sediment had no effect on the partitioning of PFCs between sediment and water in Nansi Lake.
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FAU - Wang, Shiliang
AU - Wang S
LA - eng
PT - Journal Article
DEP - 20150904
PL - Netherlands
TA - Environ Monit Assess
JT - Environmental monitoring and assessment
JID - 8508350
SB - IM
EDAT- 2015/09/06 06:00
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CRDT- 2015/09/06 06:00
PHST- 2015/04/10 [received]
PHST- 2015/08/26 [accepted]
PHST- 2015/09/04 [aheadofprint]
AID - 10.1007/s10661-015-4831-9 [doi]
PST - ppublish
SO - Environ Monit Assess. 2015 Oct;187(10):4831. doi: 10.1007/s10661-015-4831-9. Epub 2015 Sep 4.

PMID- 26367703
OWN - NLM
STAT- Publisher
DA - 20150914
LR - 20150915
IS - 1873-6424 (Electronic)
IS - 0269-7491 (Linking)
VI - 207
DP - 2015 Sep 11
TI - Estimating emissions of PFOS and PFOA to the Danube River catchment and evaluating them using a catchment-scale chemical transport and fate model.
PG - 97-106
LID - S0269-7491(15)30044-0 [pii]
LID - 10.1016/j.envpol.2015.08.050 [doi]
AB - Novel approaches for estimating the emissions of perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) to surface waters are explored. The Danube River catchment is used to investigate emissions contributing to riverine loads of PFOS and PFOA and to verify the accuracy of estimates using a catchment-scale dynamic fugacity-based chemical transport and fate model (STREAM-EU; Spatially and Temporally Resolved Exposure Assessment Model for European basins). Model accuracy evaluation performed by comparing STREAM-EU predicted concentrations and monitoring data for the Danube and its tributaries shows that the best estimates for PFOS and PFOA emissions in the Danube region are obtained by considering the combined contributions of human population,

wealth (based on local gross domestic product (GDP)) and wastewater treatment. Human population alone cannot explain the levels of PFOS and PFOA found in the Danube catchment waters. Introducing wealth distribution information in the form of local GDPs improves emission estimates markedly, likely by better representing emissions resulting from consumer trends, industrial and commercial sources. For compounds such as PFOS and PFOA, whose main sink and transport media is the aquatic compartment, a major source to freshwater are wastewater treatment plants. Introducing wastewater treatment information in the emission estimations also further improves emission estimates.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150911

TA - Environ Pollut

JT - Environmental pollution (Barking, Essex : 1987)

JID - 8804476

OTO - NOTNLM

OT - Danube basin

OT - Emissions estimation

OT - Modelling

OT - PFOA

OT - PFOS

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PST - aheadofprint

SO - Environ Pollut. 2015 Sep 11;207:97-106. doi: 10.1016/j.envpol.2015.08.050.

PMID- 26432473

OWN - NLM

STAT- Publisher

DA - 20151003

LR - 20151004

IS - 1096-0953 (Electronic)

IS - 0013-9351 (Linking)

VI - 143

IP - Pt A

DP - 2015 Sep 29

TI - Examining confounding by diet in the association between perfluoroalkyl acids and serum cholesterol in pregnancy.

PG - 33-38

LID - S0013-9351(15)30071-2 [pii]

LID - 10.1016/j.envres.2015.09.001 [doi]

AB - BACKGROUND: Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) have consistently been associated with higher cholesterol levels in cross sectional studies. Concerns have, however, been raised about potential confounding by diet and clinical relevance. OBJECTIVE: To examine the association between concentrations of PFOS and PFOA and total cholesterol in serum during pregnancy taking into considerations confounding by diet. METHODS: 854 Danish women who gave birth in 1988-89 and provided a blood sample and reported their diet in week 30 of gestation. RESULTS: Mean serum PFOS, PFOA and total cholesterol concentrations were 22.3ng/mL, 4.1ng/mL and 7.3mmol/L, respectively. Maternal diet was a significant predictor of serum PFOS and PFOA concentrations. In particular intake of meat and meat products was positively associated while intake of vegetables was inversely associated (P for trend <0.01) with relative difference between the highest and lowest quartile in PFOS and PFOA concentrations ranging between 6% and 25% of mean values. After adjustment for dietary factors both PFOA and PFOS were positively and similarly associated with serum cholesterol (P for trend <0.01). For example, the mean increase in serum cholesterol was 0.39mmol/L (95%CI: 0.09, 0.68) when comparing women in the highest to lowest quintile of PFOA concentrations. In comparison the mean increase in serum cholesterol was 0.61mmol/L (95%CI: 0.17, 1.05) when comparing women in the highest to lowest quintile of saturated fat intake. CONCLUSION: In this study associations between PFOS and PFOA with serum cholesterol appeared unrelated to dietary intake and were similar in magnitude as the associations between saturated fat intake and serum cholesterol.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150929

TA - Environ Res

JT - Environmental research

JID - 0147621

OTO - NOTNLM

OT - Cholesterol

OT - Diet

OT - PFOA

OT - PFOS

OT - Pregnancy

OT - Saturated fat

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OWN - NLM

STAT- Publisher

DA - 20150911

LR - 20150912

IS - 1614-7499 (Electronic)

IS - 0944-1344 (Linking)

DP - 2015 Sep 11

TI - Thermal mineralization behavior of PFOA, PFHxA, and PFOS during reactivation of granular activated carbon (GAC) in nitrogen atmosphere.

AB - Waste disposal site is one of the important sinks of chemicals. A significant amount of perfluoroalkyl and polyfluoroalkyl substances (PFASs) such as perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), and perfluorohexanoic acid (PFHxA) have been brought into it. Because of their aqueous solubility, PFASs are released to landfill effluent waters, from which PFASs are efficiently collected by adsorption technique using granular activated carbon (GAC). The exhausted GAC is reactivated by heating processes. The mineralization of PFASs during the reactivation process was studied. Being thermally treated in N₂ atmosphere, the recovery rate of mineralized fluorine and PFC homologues including short-chained perfluorocarboxylic acids was determined. If the reagent form of PFOA, PFHxA, and PFOS were treated at 700 degrees C, the recovery of mineralized fluorine was less than 30, 46, and 72 %, respectively. The rate increased to 51, 74, and 70 %, if PFASs were adsorbed onto GAC in advance; moreover, addition of excess sodium hydroxide (NaOH) improved the recovery to 74, 91, and 90 %. Residual PFAS homologue was less than 1 % of the original amount. Steamed condition did not affect destruction. The significant role of GAC was to suppress volatile release of PFASs from thermal ambient, whereas NaOH enhanced destruction and retained mineralized fluorine on the GAC surface. Comparing the recovery of mineralized fluorine, the degradability of PFOS was considered to be higher than PFOA and PFHxA. Whole mass balance missing 9~26 % of initial amount suggested formation of some volatile organofluoro compounds beyond analytical coverage.

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 LA - ENG
 PT - JOURNAL ARTICLE
 DEP - 20150911
 TA - Environ Sci Pollut Res Int
 JT - Environmental science and pollution research international
 JID - 9441769
 OTO - NOTNLM
 OT - Activated carbon
 OT - Decomposition
 OT - Destruction
 OT - Mineralization
 OT - Perfluoroalkyl and polyfluoroalkyl substances
 OT - Reactivation
 OT - Regeneration
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 PST - aheadofprint
 SO - Environ Sci Pollut Res Int. 2015 Sep 11.

 PMID- 26390224
 OWN - NLM
 STAT- Publisher
 DA - 20150930
 LR - 20150930
 IS - 1520-5851 (Electronic)
 IS - 0013-936X (Linking)
 DP - 2015 Sep 30
 TI - Mass Balance of Perfluorinated Alkyl Acids in a Pristine Boreal Catchment.
 AB - Mass balances of ten individual perfluorinated alkyl acids (PFAAs) in two nested
 pristine catchments in Northern Sweden with different sizes and hydrological
 functions were assembled for 2011-2012. Concentrations of PFAAs in rain and
 snowmelt, as well as in streamwater at the outlet of the two watersheds were
 measured and used to calculate PFAA atmospheric inputs to and riverine outputs
 from the catchments. The results generally showed a great excess of PFAA inputs
 for both catchments over the whole study year. However, during the spring flood
 period, the inputs and outputs were within a factor of 2 for several PFAAs and
 the streamwater showed PFAA patterns resembling the patterns in rain (as opposed
 to snowmelt), suggesting that snowmelt water infiltrating the ground had
 displaced water from the previous summer. Comparison of PFAA mass balances

between the two catchments further suggested that atmospheric inputs of short-chain (replacement) perfluoroalkyl carboxylic acids had increased in the years before sampling, while inputs of the legacy perfluorooctane sulfonic acid had decreased. Overall, the mass balances indicate that a considerable portion of the PFAAs deposited from the atmosphere are stored in soil and may be released to surface and marine water environments in the future.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150930

TA - Environ Sci Technol

JT - Environmental science & technology

JID - 0213155

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AID - 10.1021/acs.est.5b03403 [doi]

PST - aheadofprint

SO - Environ Sci Technol. 2015 Sep 30.

PMID- 26291735

OWN - NLM

STAT- In-Data-Review

DA - 20150901

IS - 1520-5851 (Electronic)

IS - 0013-936X (Linking)

VI - 49

IP - 17

DP - 2015 Sep 1

TI - Breastfeeding as an Exposure Pathway for Perfluorinated Alkylates.

PG - 10466-73

LID - 10.1021/acs.est.5b02237 [doi]

AB - Perfluorinated alkylate substances (PFASs) are widely used and have resulted in human exposures worldwide. PFASs occur in breast milk, and the duration of breastfeeding is associated with serum-PFAS concentrations in children. To determine the time-dependent impact of this exposure pathway, we examined the serum concentrations of five major PFASs in a Faroese birth cohort at birth, and at ages 11, 18, and 60 months. Information about the children's breastfeeding history was obtained from the mothers. The trajectory of serum-PFAS concentrations during months with and without breastfeeding was examined by linear mixed models that accounted for the correlations of the PFAS measurements for each child. The models were adjusted for confounders such as body size. The duration of exclusive breastfeeding was associated with increases of most PFAS concentrations by up to 30% per month, with lower increases during partial breast-feeding. In contrast to this main pattern, perfluorohexanesulfonate was not affected by breast-feeding. After cessation of breastfeeding, all serum concentrations decreased. This finding supports the evidence of breastfeeding being an important exposure pathway to some PFASs in infants.

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LA - eng

PT - Journal Article

DEP - 20150820

PL - United States

TA - Environ Sci Technol

JT - Environmental science & technology

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 PST - ppublish
 SO - Environ Sci Technol. 2015 Sep 1;49(17):10466-73. doi: 10.1021/acs.est.5b02237.
 Epub 2015 Aug 20.

PMID- 26244813
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150901
 IS - 1520-5851 (Electronic)
 IS - 0013-936X (Linking)
 VI - 49
 IP - 17
 DP - 2015 Sep 1
 TI - Efficient Sorption and Removal of Perfluoroalkyl Acids (PFAAs) from Aqueous Solution by Metal Hydroxides Generated in Situ by Electrocoagulation.
 PG - 10562-9
 LID - 10.1021/acs.est.5b02092 [doi]
 AB - Removal of environmentally persistent perfluoroalkyl acids (PFAAs), that is, perfluorooctanesulfonate (PFOS) and perfluorocarboxylic acids (PFCAs, C4 approximately C10) were investigated through sorption on four metal hydroxide flocs generated in situ by electrocoagulation in deionized water with 10 mM NaCl as supporting electrolyte. The results indicated that the zinc hydroxide flocs yielded the highest removal efficiency with a wide range concentration of PFOA/PFOS (1.5 μ M approximately 0.5 mM) at the zinc dosage <150 mg L⁻¹ with the energy consumption <0.18 Wh L⁻¹. The sorption kinetics indicated that the zinc hydroxide flocs had an equilibrium adsorbed amount (q_e) up to 5.74/7.69 mmol g⁻¹ (Zn) for PFOA/PFOS at the initial concentration of 0.5 mM with an initial sorption rate (v_0) of $1.01 \times 10(3)/1.81 \times 10(3)$ mmol g⁻¹ h⁻¹. The sorption of PFOA/PFOS reached equilibrium within <10 min. The sorption mechanisms of PFAAs on the zinc hydroxide flocs were proposed based on the investigation of various driving forces. The results indicated that the hydrophobic interaction was primarily responsible for the PFAAs sorption. The electrocoagulation process with zinc anode may have a great potential for removing PFAAs from industrial wastewater as well as contaminated environmental waterbody.

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LA - eng

PT - Journal Article

DEP - 20150813

PL - United States

TA - Environ Sci Technol

JT - Environmental science & technology

JID - 0213155

SB - IM

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SO - Environ Sci Technol. 2015 Sep 1;49(17):10562-9. doi: 10.1021/acs.est.5b02092.
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OWN - NLM

STAT- In-Data-Review

DA - 20151007

IS - 1520-5851 (Electronic)

IS - 0013-936X (Linking)

VI - 49

IP - 19

DP - 2015 Oct 6

TI - Identification of Novel Perfluoroalkyl Ether Carboxylic Acids (PFECAs) and
Sulfonic Acids (PFESAs) in Natural Waters Using Accurate Mass Time-of-Flight Mass
Spectrometry (TOFMS).

PG - 11622-30

LID - 10.1021/acs.est.5b01215 [doi]

AB - Recent scientific scrutiny and concerns over exposure, toxicity, and risk have
led to international regulatory efforts resulting in the reduction or elimination
of certain perfluorinated compounds from various products and waste streams. Some
manufacturers have started producing shorter chain per- and polyfluorinated
compounds to try to reduce the potential for bioaccumulation in humans and
wildlife. Some of these new compounds contain central ether oxygens or other
minor modifications of traditional perfluorinated structures. At present, there

has been very limited information published on these "replacement chemistries" in the peer-reviewed literature. In this study we used a time-of-flight mass spectrometry detector (LC-ESI-TOFMS) to identify fluorinated compounds in natural waters collected from locations with historical perfluorinated compound contamination. Our workflow for discovery of chemicals included sequential sampling of surface water for identification of potential sources, nontargeted TOFMS analysis, molecular feature extraction (MFE) of samples, and evaluation of features unique to the sample with source inputs. Specifically, compounds were tentatively identified by (1) accurate mass determination of parent and/or related adducts and fragments from in-source collision-induced dissociation (CID), (2) in-depth evaluation of in-source adducts formed during analysis, and (3) confirmation with authentic standards when available. We observed groups of compounds in homologous series that differed by multiples of CF₂ (m/z 49.9968) or CF₂O (m/z 65.9917). Compounds in each series were chromatographically separated and had comparable fragments and adducts produced during analysis. We detected 12 novel perfluoroalkyl ether carboxylic and sulfonic acids in surface water in North Carolina, USA using this approach. A key piece of evidence was the discovery of accurate mass in-source n-mer formation (H(+) and Na(+)) differing by m/z 21.9819, corresponding to the mass difference between the protonated and sodiated dimers.

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LA - eng

PT - Journal Article

DEP - 20150922

PL - United States

TA - Environ Sci Technol

JT - Environmental science & technology

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Epub 2015 Sep 22.

PMID- 26333069

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STAT- In-Data-Review

DA - 20151007

LR - 20151018

IS - 1520-5851 (Electronic)

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VI - 49

IP - 19

DP - 2015 Oct 6

TI - Sociodemographic and Perinatal Predictors of Early Pregnancy Per- and
Polyfluoroalkyl Substance (PFAS) Concentrations.

PG - 11849-58

LID - 10.1021/acs.est.5b02489 [doi]

AB - Per- and polyfluoroalkyl substances (PFASs), used in food packaging and stain-resistant coatings, are suspected developmental toxicants that are ubiquitous and persistent in the environment. We measured plasma PFAS concentrations during early pregnancy (median = 9.7 weeks gestation) among 1645 women in the Boston-area Project Viva cohort, recruited during 1999-2002. We used multivariable linear regression to estimate associations of sociodemographic and perinatal predictors, including measures of pregnancy physiology (albumin, glomerular filtration rate (GFR)), with log-transformed plasma PFAS concentrations. Geometric mean concentrations for the four main PFASs, perfluorooctanesulfonate (PFOS), perfluorooctanoate (PFOA), perfluorohexanesulfonate (PFHxS) and perfluorononanoate (PFNA) were 25.4, 5.7, 2.5, and 0.6 ng/mL, respectively, comparable with general U.S. population concentrations during those years. Higher early pregnancy PFAS concentrations were associated with younger age (except PFNA), less educational attainment, nulliparity, no history of breastfeeding and higher prepregnancy body mass index in adjusted models. In addition, lower GFR was associated with 3-4% higher PFAS concentrations and higher albumin was associated with 4-6% higher PFAS concentrations. Our results show associations consistent (parity and breastfeeding) and less consistent (age and education) with previous studies. We also report associations with GFR and albumin, which were strongly related to PFAS concentrations and thus could confound estimates of PFAS-outcome associations in epidemiologic studies.

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GR - K24 HD069408/HD/NICHD NIH HHS/United States

GR - P30 DK092924/DK/NIDDK NIH HHS/United States

GR - R01 ES021447/ES/NIEHS NIH HHS/United States

GR - R37 HD034568/HD/NICHD NIH HHS/United States

PT - Journal Article

DEP - 20150911

PL - United States

TA - Environ Sci Technol

JT - Environmental science & technology

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SO - Environ Sci Technol. 2015 Oct 6;49(19):11849-58. doi: 10.1021/acs.est.5b02489.
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DA - 20151007

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IS - 0013-936X (Linking)

VI - 49

IP - 19

DP - 2015 Oct 6

TI - Emission, Dynamics and Transport of Perfluoroalkyl Substances from Land to Ocean by the Great East Japan Earthquake in 2011.

PG - 11421-8

LID - 10.1021/acs.est.5b01687 [doi]

AB - Water samples collected along the Japanese coast and in the open Pacific Ocean in 2010, 2011, and 2012 were analyzed for perfluoroalkyl substances (PFASs) to evaluate the effect of Great East Japan Earthquake (EQ 3.11), which occurred on March 11, 2011, on the dispersion of chemical pollutants. Ultratrace analysis of PFASs in water, a super computer simulation, and an inventory analysis from industrial records revealed the sources and dynamics of PFASs during the EQ 3.11 disaster. In this respect, EQ 3.11 destroyed solid infrastructure on land, and within minutes, PFASs stocked therein were released into the open environment. The historically significant tsunami backwash swept them away from their origin to the coastal water within several hours. It was estimated that from 0.8 to 1.0 tons of perfluorooctanesulfonate (PFOS) and 4.8 to 5.1 tons of PFOA were discharged into the coastal waters after EQ 3.11 and the tsunami that followed. The reconstruction of EQ 3.11 also traced the influence of this pollution in open ocean water until March 2012, and a statistical and finger printing analysis revealed that there were different distribution mechanisms in coastal regions than in the open ocean for PFOS, other shorter chain perfluorinated sulfonic acids and perfluorinated carboxylic acids.

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 LA - eng
 PT - Journal Article
 DEP - 20150909
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 TA - Environ Sci Technol
 JT - Environmental science & technology
 JID - 0213155
 SB - IM
 EDAT- 2015/09/01 06:00
 MHDA- 2015/09/01 06:00
 CRDT- 2015/09/01 06:00
 PHST- 2015/09/09 [aheadofprint]
 AID - 10.1021/acs.est.5b01687 [doi]
 PST - ppublish
 SO - Environ Sci Technol. 2015 Oct 6;49(19):11421-8. doi: 10.1021/acs.est.5b01687.
 Epub 2015 Sep 9.

 PMID- 24616003
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150813
 IS - 1522-7278 (Electronic)
 IS - 1520-4081 (Linking)
 VI - 30
 IP - 9
 DP - 2015 Sep
 TI - Prenatal exposure to PFOS caused mitochondria-mediated apoptosis in heart of
 weaned rat.
 PG - 1082-90
 LID - 10.1002/tox.21981 [doi]
 AB - Perfluorooctanyl sulfonate (PFOS), a cardiac toxicity compound, has been widely
 detected in the environment and in organisms. However, the toxic mechanism is not
 clear. Our previous study indicated that prenatal PFOS exposure led to swollen
 mitochondrial with vacuolar structure and loss of cristae in offspring's heart.
 The purpose of this study was to investigate the effect of PFOS on the apoptosis
 in developing heart and mitochondria-mediated apoptosis pathway. Pregnant
 Sprague-Dawley (SD) rats were exposed to PFOS at doses of 0.1, 0.6, and 2.0
 mg/kg-d and 0.05% Tween 80 as control by gavage from gestation day 2 (GD 2) to GD

21. Apoptosis, as well as expression of apoptosis related genes associated with mitochondrial-mediated apoptosis pathway, including p53, bcl-2, bax, cytochrome c, caspase-9, and caspase-3 were analyzed in heart tissues from weaned (postnatal day 21, PND 21) offspring. The results showed that prenatal PFOS exposure resulted in apoptosis in the offspring's heart. The mRNA and protein expression levels of p53, bax, cytochrome c, caspase-9, and caspase-3 in the offspring's heart were enhanced in various PFOS-treated groups, meanwhile, the bcl-2 expression levels were decreased. Our results indicated that prenatal PFOS exposure induced the apoptosis of weaned offspring rat heart tissue via mitochondria-mediated apoptotic pathway. (c) 2014 Wiley Periodicals, Inc. Environ Toxicol 30: 1082-1090, 2015.

CI - (c) 2014 Wiley Periodicals, Inc.

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LA - eng

PT - Journal Article

DEP - 20140311

PL - United States

TA - Environ Toxicol
 JT - Environmental toxicology
 JID - 100885357
 SB - IM
 OTO - NOTNLM
 OT - PFOS
 OT - apoptosis
 OT - heart
 OT - mitochondria pathway
 EDAT- 2014/03/13 06:00
 MHDA- 2014/03/13 06:00
 CRDT- 2014/03/12 06:00
 PHST- 2012/05/16 [received]
 PHST- 2014/02/17 [revised]
 PHST- 2014/02/23 [accepted]
 PHST- 2014/03/11 [aheadofprint]
 AID - 10.1002/tox.21981 [doi]
 PST - ppublish
 SO - Environ Toxicol. 2015 Sep;30(9):1082-90. doi: 10.1002/tox.21981. Epub 2014 Mar 11.

 PMID- 26332333
 OWN - NLM
 STAT- Publisher
 DA - 20150902
 LR - 20150904
 IS - 1552-8618 (Electronic)
 IS - 0730-7268 (Linking)
 DP - 2015 Sep 2
 TI - Toxicokinetics of perfluorooctane sulfonate (PFOS) in rainbow trout (*Oncorhynchus mykiss*).
 LID - 10.1002/etc.3230 [doi]
 AB - Rainbow trout (*Oncorhynchus mykiss*) confined to respirometer-metabolism chambers were dosed with perfluorooctane sulfonate (PFOS) by intra-arterial injection and sampled to obtain concentration time-course data for plasma, and either urine or expired water. The data were then analyzed using a two-compartment clearance-volume model. Renal and branchial clearance rates (CLR and CLB ; mL/d/kg) determined for all experiments averaged 19% and 81% of total clearance (CLT), respectively. Expressed as mean values for all studies, the steady-state volume of distribution (VSS) was 277 mL/kg and the terminal half-life (T1/2) was 86.8 d. Additional animals were exposed to PFOS in water, resulting in an average calculated branchial uptake efficiency of 0.36%. The CLR determined in the present study is approximately 75 times lower than that determined in earlier studies with perfluorooctanoate (PFOA). Previously, it was suggested that PFOA is a substrate for membrane transporters in the trout kidney. The present study suggests that glomerular filtration may be sufficient to explain the observed CLR for PFOS, although a role for membrane transporters cannot be ruled out. These findings demonstrate that models developed to predict the bioaccumulation of

perfluoroalkyl acids by fish must account for differences in renal clearance of individual compounds. This article is protected by copyright. All rights reserved.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150902

TA - Environ Toxicol Chem

JT - Environmental toxicology and chemistry / SETAC

JID - 8308958

OTO - NOTNLM

OT - Bioaccumulation

OT - Perfluorooctane sulfonate

OT - Renal elimination

OT - Tissue distribution

OT - Toxicokinetics

EDAT- 2015/09/04 06:00

MHDA- 2015/09/04 06:00

CRDT- 2015/09/03 06:00

PHST- 2015/06/08 [received]

PHST- 2015/08/01 [revised]

PHST- 2015/08/31 [accepted]

AID - 10.1002/etc.3230 [doi]

PST - aheadofprint

SO - Environ Toxicol Chem. 2015 Sep 2. doi: 10.1002/etc.3230.

PMID- 26383989

OWN - NLM

STAT- Publisher

DA - 20150918

LR - 20150919

IS - 1552-8618 (Electronic)

IS - 0730-7268 (Linking)

DP - 2015 Sep 18

TI - Competing mechanisms for perfluoroalkyl-acid accumulation in plants revealed using an Arabidopsis model system.

LID - 10.1002/etc.3251 [doi]

AB - Perfluoroalkyl acids (PFAAs) bioaccumulate in plants, presenting a human exposure route if present in irrigation water. Curiously, accumulation of PFAAs in plant tissues is greatest for both the short- and long-chain PFAAs, generating a "U-shaped" relationship with chain-length. In the present study we decouple competing mechanisms of PFAA accumulation using a hydroponic model plant system (*Arabidopsis thaliana*) exposed to a suite of 10 PFAAs to determine uptake, depuration, and translocation kinetics. Rapid saturation of root concentrations occurred for all PFAAs except perfluorobutanoate, the least-sorptive (shortest-chain) PFAA. Shoot concentrations increased continuously, indicating that PFAAs are efficiently transported and accumulate in shoots. Tissue concentrations of PFAAs during depuration rapidly declined in roots but remained constant in shoots, demonstrating irreversibility of the translocation process. Root- and shoot-concentration factors followed the "U-shaped" trend with perfluoroalkyl chain-length; however, when normalized to dead-tissue sorption, this relationship linearized. We therefore introduce a novel term, the Sorption Normalized Concentration Factor (SNCF), to describe PFAA accumulation in plants: due to their hydrophobicity, sorption is the determining factor for long-chain PFAAs, while the shortest chain PFAAs are most effectively transported in the plant. The present study provides a mechanistic explanation for previously unexplained PFAA accumulation trends in plants and suggests that shorter-chained PFAAs may bioaccumulate more readily in edible portions. This article is protected by copyright. All rights reserved.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150918

TA - Environ Toxicol Chem

JT - Environmental toxicology and chemistry / SETAC

JID - 8308958

OTO - NOTNLM

OT - Bioaccumulation

OT - Environmental Fate

OT - Perfluoroalkyl substance (PFAS)

OT - Plants

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PHST- 2015/04/24 [received]

PHST- 2015/06/25 [revised]

PHST- 2015/09/15 [accepted]

AID - 10.1002/etc.3251 [doi]

PST - aheadofprint

SO - Environ Toxicol Chem. 2015 Sep 18. doi: 10.1002/etc.3251.

PMID- 26254212

OWN - NLM

STAT- In-Data-Review

DA - 20150924
IS - 1872-7077 (Electronic)
IS - 1382-6689 (Linking)
VI - 40
IP - 2
DP - 2015 Sep
TI - More signs of neurotoxicity of surfactants and flame retardants - Neonatal PFOS and PBDE 99 cause transcriptional alterations in cholinergic genes in the mouse CNS.
PG - 409-16
LID - 10.1016/j.etap.2015.06.014 [doi]
LID - S1382-6689(15)30014-4 [pii]
AB - Maternally and lactationally transferred persistent organic pollutants may interfere with CNS development. Here, 10-day-old male mice were exposed to single oral doses of PFOS (perfluorooctanosulphonate) or PBDE 99 (2,2',4,4',5-penta-bromodiphenyl ether), and examined for changes in cholinergic gene transcription in the CNS 24h and 7 weeks later. 24h after exposure qPCR analyses revealed decreased transcription of nAChR-beta2 and AChE in cortex, and increased mAChR-5 in hippocampus of PFOS treated mice. Neonatal PFOS treatment altered spontaneous behaviour at 2 months of age but did not affect gene transcription in adults. At 2 months of age neonatally PBDE 99 treated mice had altered spontaneous behaviour, and cortical transcription of AChE, nAChR-alpha4, nAChR-beta2 and mAChR-5 were elevated. Our results indicate that PFOS and PBDE 99 affects the developing central cholinergic system by altering gene transcription in cortex and hippocampus, which may in part account for mechanisms causing changes in spontaneous behaviour.
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LA - eng
PT - Journal Article
DEP - 20150718
PL - Netherlands
TA - Environ Toxicol Pharmacol
JT - Environmental toxicology and pharmacology
JID - 9612020
SB - IM
OTO - NOTNLM

OT - Brain growth spurt

OT - Brominated flame retardants

OT - Cholinergic system

OT - Developmental neurotoxicology

OT - Perflourinated chemical repellants

EDAT- 2015/08/09 06:00

MHDA- 2015/08/09 06:00

CRDT- 2015/08/09 06:00

PHST- 2015/06/02 [received]

PHST- 2015/06/08 [accepted]

PHST- 2015/07/18 [aheadofprint]

AID - S1382-6689(15)30014-4 [pii]

AID - 10.1016/j.etap.2015.06.014 [doi]

PST - ppublish

SO - Environ Toxicol Pharmacol. 2015 Sep;40(2):409-16. doi:
10.1016/j.etap.2015.06.014. Epub 2015 Jul 18.

PMID- 26371149

OWN - NLM

STAT- In-Data-Review

DA - 20151008

IS - 1574-6968 (Electronic)

IS - 0378-1097 (Linking)

VI - 362

IP - 20

DP - 2015 Oct

TI - Recombinant production of omega-3 fatty acids by probiotic *Escherichia coli* Nissle 1917.

LID - 10.1093/femsle/fnv166 [doi]

LID - fnv166 [pii]

AB - Omega-3 fatty acids, including eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), have beneficial effects on human health. The probiotic bacterium *Escherichia coli* Nissle is unable to produce either EPA or DHA. *Escherichia coli* Nissle was transformed with the pFBS-PS plasmid carrying the EPA/DHA gene cluster, previously isolated from a marine bacterium. The transgenic *E. coli* Nissle produced EPA when grown at 10 masculineC (16.52 +/- 1.4 mg g⁽⁻¹⁾ cell dry weight), 15 masculineC (31.36 +/- 0.25 mg g⁽⁻¹⁾ cell dry weight), 20 masculineC (13.71 +/- 2.8 mg g⁽⁻¹⁾ cell dry weight), 25 masculineC (11.33 +/- 0.44 mg g⁽⁻¹⁾ cell dry weight) or 30 masculineC (0.668 +/- 0.073 mg g⁽⁻¹⁾ cell dry weight). Although DHA was also produced at all these temperatures, it comprised less than 0.2% of total extracted fatty acids. Transcriptomic analysis using Reverse Transcription qPCR showed upregulation of the entire gene cluster in *E. coli* Nissle. Among EPA/DHA genes, pfaB, pfaC and pfaD were overexpressed (expression ratio of 181.9, 39.86 and 131.61, respectively) as compared to pfaA (expression ratio of 3.40) and pfaE (expression ratio of 4.05). The EPA/DHA-producing probiotic *E. coli* Nissle may be used as a safe, alternative and economic source for the industrial and pharmaceutical production of EPA and DHA.

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LA - eng

PT - Journal Article

DEP - 20150913

PL - England

TA - FEMS Microbiol Lett

JT - FEMS microbiology letters

JID - 7705721

SB - IM

OTO - NOTNLM

OT - dha

OT - epa

OT - probiotic

EDAT- 2015/09/16 06:00

MHDA- 2015/09/16 06:00

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PHST- 2015/09/09 [accepted]

PHST- 2015/09/13 [aheadofprint]

AID - fnv166 [pii]

AID - 10.1093/femsle/fnv166 [doi]

PST - ppublish

SO - FEMS Microbiol Lett. 2015 Oct;362(20). pii: fnv166. doi: 10.1093/femsle/fnv166.
Epub 2015 Sep 13.

PMID- 26366629

OWN - NLM

STAT- Publisher

DA - 20150914
LR - 20150915
IS - 1944-0057 (Electronic)
IS - 1944-0057 (Linking)
DP - 2015 Sep 14
TI - Determination of perfluoroalkylated substances (PFASs) in drinking water from the Netherlands and Greece.
AB - In the present study 11 perfluoroalkylated substances (PFASs) were analysed in drinking tap water samples from the Netherlands (n = 37) and from Greece (n = 43) by applying LC-MS/MS and isotope dilution. PFASs concentrations above the limit of quantification, LOQ (0.6 ng/L) were detected in 20.9% of the samples from Greece. Total PFAS concentrations ranged between <LOQ to 5.9 ng/L, with the highest concentrations noted for the three Aegean islands, Mykonos, Kalymnos and Syros and for the town Tripoli in the Peloponnese. In the Dutch situation, total PFASs concentrations above the LOQ were detected in 48.6% of the samples, varying from <LOQ to 54 ng/L. The highest concentrations were detected around Amsterdam (including Schiphol airport) and more general, PFASs were detected in the drinking water from the western part of the Netherlands. This seems attributable to the source, which is purified surface water in this area. Short chain PFASs and especially perfluoropentanoic acid (PFPeA), perfluorohexanoic acid (PFHxA), perfluoroheptanoic acid (PFHpA), perfluorooctanoic acid (PFOA), perfluorobutane sulfonate (PFBS), perfluorohexane sulfonate (PFHxS), were detected most frequently, whereas long-chain PFASs (C > 8) were only rarely detected. In the drinking water samples from the eastern part of the Netherlands, where drinking water is sourced from groundwater reservoirs, no PFASs were detected. This demonstrates that exposure to PFASs through drinking water in the Netherlands is dependent on the source. Additionally, five samples of bottled water from each country were analysed in the current study, with all of them originating from ground wells. In these samples, all PFASs were below the LOQ.
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 LA - ENG
 PT - JOURNAL ARTICLE
 DEP - 20150914
 TA - Food Addit Contam Part A Chem Anal Control Expo Risk Assess
 JT - Food additives & contaminants. Part A, Chemistry, analysis, control, exposure &
 risk assessment
 JID - 101485040
 OTO - NOTNLM
 OT - Greece
 OT - Netherlands
 OT - PFASs
 OT - bottled water
 OT - drinking tap water
 OT - surface water
 EDAT- 2015/09/15 06:00
 MHDA- 2015/09/15 06:00
 CRDT- 2015/09/15 06:00
 AID - 10.1080/19440049.2015.1086823 [doi]
 PST - aheadofprint
 SO - Food Addit Contam Part A Chem Anal Control Expo Risk Assess. 2015 Sep 14.

 PMID- 26032630
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150817
 IS - 1873-6351 (Electronic)
 IS - 0278-6915 (Linking)
 VI - 83
 DP - 2015 Sep
 TI - Initial study on the possible mechanisms involved in the effects of high doses of
 perfluorooctane sulfonate (PFOS) on prolactin secretion.
 PG - 10-6
 LID - 10.1016/j.fct.2015.05.013 [doi]

LID - S0278-6915(15)00178-7 [pii]

AB - Perfluorooctane sulfonate (PFOS) is a fluorinated organic compound. This chemical is neurotoxic and can alter the pituitary secretion. This is an initial study aimed at knowing the toxic effects of high doses of PFOS on prolactin secretion and the possible mechanisms involved in these alterations. For that, adult male rats were orally treated with 3.0 and 6.0 mg of PFOS/kg body weight (b.w.)/day for 28 days. At the end of the treatment, the serum levels of prolactin and estradiol as well as the concentration of dopamine, 3,4-dihydroxyphenylacetic acid (DOPAC), homovanillic acid (HVA) and gamma-aminobutyric acid (GABA) were quantified in the anterior and in the mediobasal hypothalamus. PFOS, at the administered doses, reduced prolactin and estradiol secretion, increased the concentration of dopamine and GABA in the anterior hypothalamus, and decreased the ratios DOPAC/dopamine and HVA/dopamine in this same hypothalamic area. The outcomes reported in this study suggest that (1) high doses of PFOS inhibit prolactin secretion in adult male rats; (2) only the periventricular-hypophyseal dopaminergic (PHDA) neurons seem to be involved in this inhibitory effect but not the tuberoinfundibular dopaminergic (TIDA) and the tuberohypophyseal dopaminergic (THDA) systems; (3) GABAergic cells from the paraventricular and supraoptic nuclei could be partially responsible for the PFOS action on prolactin secretion; and finally (4) estradiol might take part in the inhibition exerted by elevated concentration of PFOS on prolactin release.

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LA - eng

PT - Journal Article

DEP - 20150530

PL - England

TA - Food Chem Toxicol

JT - Food and chemical toxicology : an international journal published for the British Industrial Biological Research Association

JID - 8207483

SB - IM

OTO - NOTNLM

OT - Dopamine
 OT - Estradiol
 OT - GABA
 OT - PFOS
 OT - Prolactin
 OT - Rat
 EDAT- 2015/06/03 06:00
 MHDA- 2015/06/03 06:00
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 PHST- 2015/04/20 [received]
 PHST- 2015/05/18 [revised]
 PHST- 2015/05/21 [accepted]
 PHST- 2015/05/30 [aheadofprint]
 AID - S0278-6915(15)00178-7 [pii]
 AID - 10.1016/j.fct.2015.05.013 [doi]
 PST - ppublish
 SO - Food Chem Toxicol. 2015 Sep;83:10-6. doi: 10.1016/j.fct.2015.05.013. Epub 2015 May 30.

 PMID- 26337877
 OWN - NLM
 STAT- PubMed-not-MEDLINE
 DA - 20150904
 DCOM- 20150904
 LR - 20150907
 IS - 2169-8287 (Electronic)
 VI - 3
 IP - 5
 DP - 2015
 TI - Draft Genome Sequence of Perfluorooctane Acid-Degrading Bacterium *Pseudomonas parafulva* YAB-1.
 LID - 10.1128/genomeA.00935-15 [doi]
 LID - e00935-15 [pii]
 AB - *Pseudomonas parafulva* YAB-1, isolated from perfluorinated compound-contaminated soil, has the ability to degrade perfluorooctane acid (PFOA) compound. Here, we report the draft genome sequence and annotation of the PFOA-degrading bacterium *P. parafulva* YAB-1. The data provide the basis to investigate the molecular mechanism of PFOA metabolism.
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 LA - eng
 PT - Journal Article
 DEP - 20150903
 PL - United States
 TA - Genome Announc
 JT - Genome announcements
 JID - 101595808
 PMC - PMC4559726
 OID - NLM: PMC4559726
 EDAT- 2015/09/05 06:00
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 CRDT- 2015/09/05 06:00
 AID - 3/5/e00935-15 [pii]
 AID - 10.1128/genomeA.00935-15 [doi]
 PST - epublish
 SO - Genome Announc. 2015 Sep 3;3(5). pii: e00935-15. doi: 10.1128/genomeA.00935-15.

 PMID- 26054880
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150831
 IS - 1878-1705 (Electronic)
 IS - 1567-5769 (Linking)
 VI - 28
 IP - 1
 DP - 2015 Sep
 TI - Quercetin protects against perfluorooctanoic acid-induced liver injury by attenuating oxidative stress and inflammatory response in mice.
 PG - 129-35
 LID - 10.1016/j.intimp.2015.05.043 [doi]
 LID - S1567-5769(15)00281-7 [pii]
 AB - The aim of the present study was to investigate the protective effect of quercetin (Que) against perfluorooctanoic acid (PFOA)-induced liver injury in mice and its possible mechanisms of action. Mice were intragastrically administered PFOA (10mg/kg/day) alone or in combination with Que (75mg/kg/day) for 14 consecutive days. The hepatic injury was evaluated by measuring morphological changes, liver function, oxidative stress, inflammatory response

and hepatocellular apoptosis. Compared with mice treated with PFOA alone, simultaneous supplementation of Que significantly decreased serum levels of liver injury indicators alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, lactate dehydrogenase and total bile acids. Moreover, Que treatment inhibited the production of oxidative stress biomarkers malondialdehyde, hydrogen peroxide and 8-hydroxy-2'-deoxyguanosine, reduced the levels of proinflammatory cytokines interleukin 6, cyclooxygenase-2 and C-reactive protein, and decreased the number of TUNEL-positive cells in the liver of PFOA-treated mice. These results combined with liver histopathology demonstrated that Que exhibited a potential protective effect against PFOA-induced liver damage via mechanisms involving the attenuation of oxidative stress, alleviation of inflammation and inhibition of hepatocellular apoptosis.

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LA - eng

PT - Journal Article
DEP - 20150606
PL - Netherlands
TA - Int Immunopharmacol
JT - International immunopharmacology
JID - 100965259
SB - IM
OTO - NOTNLM
OT - Apoptosis
OT - Inflammation
OT - Liver injury
OT - Oxidative stress
OT - Perfluorooctanoic acid
OT - Quercetin
EDAT- 2015/06/10 06:00
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AID - S1567-5769(15)00281-7 [pii]
AID - 10.1016/j.intimp.2015.05.043 [doi]
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SO - Int Immunopharmacol. 2015 Sep;28(1):129-35. doi: 10.1016/j.intimp.2015.05.043.
Epub 2015 Jun 6.

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OWN - NLM
STAT- In-Data-Review
DA - 20150831
IS - 1878-1705 (Electronic)
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VI - 28
IP - 1
DP - 2015 Sep
TI - Perfluorooctane sulfonate mediates microglial activation and secretion of
TNF-alpha through Ca(2+)-dependent PKC-NF-small ka, CyrillicB signaling.
PG - 52-60
LID - 10.1016/j.intimp.2015.05.019 [doi]
LID - S1567-5769(15)00248-9 [pii]
AB - Perfluorooctane sulfonate (PFOS), a ubiquitous pollutant widely found in the
environment and biota, can cause numerous adverse effects on human health. In
recent years, PFOS's toxic effects on the central nervous system (CNS) have been
shown. However, we still have a lot to study in the underlying molecular
mechanism of PFOS's neurotoxicity. Microglia, the innate immune cells of CNS, are
critically implicated in various neurological diseases caused by pro-inflammatory
mediators. In our research, we found that HAPI microglia secreted tumor necrosis

factor- α (TNF- α) after PFOS exposure in time-dependent and dose-dependent way. We also discovered that intracellular concentration of free Ca^{2+} ($[\text{Ca}^{2+}]_i$) significantly increased after PFOS treatments. It was noteworthy here the secretion of TNF- α mediated by PFOS was blocked by Ca^{2+} inhibitor and protein kinase C (PKC) inhibitor. Besides these, we had learned as well that PFOS brought about the up-regulation of phosphorylated nuclear factor κB (NF- κB , p65 expression and accelerated degradation of NF- κB inhibitor α (I κB), however, these effects could be attenuated or blocked by Ca^{2+} inhibitor and PKC inhibitor. Finally, through treating SH-SY5Y cells with PFOS-treated microglial conditioned medium, we demonstrated that TNF- α mediated neuronal apoptosis. To sum up, our research had shown, for the first time, that the distinct TNF- α secretion brought by PFOS in HAPI microglia, was achieved through the Ca^{2+} -dependent PKC-NF- κB signaling, subsequently participating in neuronal loss.

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LA - eng
PT - Journal Article
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TA - Int Immunopharmacol
JT - International immunopharmacology
JID - 100965259
SB - IM
OTO - NOTNLM
OT - Ca(2+)
OT - Microglia
OT - NF-small ka, CyrillicB
OT - PFOS
OT - PKC
OT - TNF-alpha
EDAT- 2015/05/26 06:00
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PHST- 2015/05/23 [aheadofprint]

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AID - 10.1016/j.intimp.2015.05.019 [doi]
PST - ppublish
SO - Int Immunopharmacol. 2015 Sep;28(1):52-60. doi: 10.1016/j.intimp.2015.05.019.
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PMID- 26350231
OWN - NLM
STAT- Publisher
DA - 20150909
LR - 20150910
IS - 1092-874X (Electronic)
IS - 1091-5818 (Linking)
DP - 2015 Sep 8
TI - A Combined 28-Day Oral Toxicity Study of HFPO-Amidol (CASRN 75888-49-2) With
Reproductive/Developmental Toxicity Screening Test in Wistar Han Rats.
LID - 1091581815602247 [pii]
AB - HFPO-Amidol (CAS # 75888-49-2) is a new hexafluoropropylene oxide (HFPO)-based
intermediate developed as an alternative to longer chain perfluorinated
compounds. The repeated-dose toxicity of this material was evaluated in an
Organization for Economic Cooperation and Development 422-compliant, 28-day oral
exposure study with a concurrent reproductive/developmental toxicity screening
test. Wistar rats received doses of 0, 30, 300, or 1000 mg/kg/d by oral gavage.
Statistically significant changes in body weight gain of 1000 mg/kg/d females
during the postcoitum period were possibly related to treatment but were
considered not adverse, given the slight nature of the changes. The lower food
consumption of 300 mg/kg/d females during the postcoitum and lactation period was
not considered treatment related given the absence of a time- and dose-related
trend and because food intake was generally similar to control levels after
allowance for body weights. Statistically significant changes in motor activity
(total movements and total ambulations) were noted in 1000 mg/kg/d main male and
female rats. The changes observed in female rats were considered not treatment
related in the absence of a dose-response trend. The higher motor activity of
high-dose males was primarily apparent within the first 10 minutes of the
60-minute measurement period and was suggestive of temporary hyperreactivity to a
new environment/stimulus. This increased peak motor activity remained present
although at an apparent lower magnitude when measured 13 days after withdrawal of
treatment. Because the possible toxicological relevance of the temporarily
increased motor activity observed in 1000 mg/kg/d males could not be excluded,
these changes were considered possibly adverse in nature. No treatment-related or
toxicologically relevant effects were noted on the other parental, reproductive,
and developmental parameters investigated in this study. The parental systemic no
observed adverse effect level (NOAEL) for this study is 300 mg/kg/d (based on
increased motor activity in males), while the reproductive and developmental
NOAEL is 1000 mg/kg/d.
CI - (c) The Author(s) 2015.
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LA - ENG
PT - JOURNAL ARTICLE
DEP - 20150908
TA - Int J Toxicol
JT - International journal of toxicology
JID - 9708436
OTO - NOTNLM
OT - hexafluoropropylene oxide
OT - rat
OT - repeat-dose toxicity
OT - reproductive toxicity
OT - subacute
EDAT- 2015/09/10 06:00
MHDA- 2015/09/10 06:00
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AID - 1091581815602247 [pii]
AID - 10.1177/1091581815602247 [doi]
PST - aheadofprint
SO - Int J Toxicol. 2015 Sep 8. pii: 1091581815602247.

PMID- 26357966
OWN - NLM
STAT- In-Data-Review
DA - 20150930
IS - 1520-5118 (Electronic)
IS - 0021-8561 (Linking)
VI - 63
IP - 38
DP - 2015 Sep 30
TI - Simultaneous Determination of Perfluorinated Compounds in Edible Oil by
Gel-Permeation Chromatography Combined with Dispersive Solid-Phase Extraction and
Liquid Chromatography-Tandem Mass Spectrometry.

PG - 8364-71

LID - 10.1021/acs.jafc.5b03903 [doi]

AB - A simple analytical method was developed for the simultaneous analysis of 18 perfluorinated compounds (PFCs) in edible oil. The target compounds were extracted by acetonitrile, purified by gel permeation chromatography (GPC) and dispersive solid-phase extraction (DSPE) using graphitized carbon black (GCB) and octadecyl (C18), and analyzed by liquid chromatography-electrospray ionization tandem mass spectrometry (LC-ES-MS/MS) in negative ion mode. Recovery studies were performed at three fortification levels. The average recoveries of all target PFCs ranged from 60 to 129%, with an acceptable relative standard deviation (RSD) (1-20%, n = 3). The method detection limits (MDLs) ranged from 0.004 to 0.4 mug/kg, which was significantly improved compared with the existing liquid-liquid extraction and cleanup method. The method was successfully applied for the analysis of all target PFCs in edible oil samples collected from markets in Beijing, China, and the results revealed that C6-C10 perfluorocarboxylic acid (PFCAs) and C7 perfluorosulfonic acid PFSAs were the major PFCs detected in oil samples.

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 LA - eng
 PT - Journal Article
 DEP - 20150922
 PL - United States
 TA - J Agric Food Chem
 JT - Journal of agricultural and food chemistry
 JID - 0374755
 SB - IM
 OTO - NOTNLM
 OT - HPLC-MS/MS
 OT - dispersive solid-phase extraction
 OT - edible oil
 OT - gel permeation chromatography
 OT - perfluorinated compounds
 EDAT- 2015/09/12 06:00
 MHDA- 2015/09/12 06:00
 CRDT- 2015/09/12 06:00
 PHST- 2015/09/22 [aheadofprint]
 AID - 10.1021/acs.jafc.5b03903 [doi]
 PST - ppublish
 SO - J Agric Food Chem. 2015 Sep 30;63(38):8364-71. doi: 10.1021/acs.jafc.5b03903.
 Epub 2015 Sep 22.

 PMID- 26309158
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150916
 IS - 1520-5126 (Electronic)
 IS - 0002-7863 (Linking)

VI - 137
IP - 36
DP - 2015 Sep 16
TI - Pd-Catalyzed Stereoselective Carboperfluoroalkylation of Alkynes.
PG - 11610-3
LID - 10.1021/jacs.5b07432 [doi]
AB - A Pd-catalyzed three component reaction involving terminal alkynes, boronic acids, and perfluoroalkyl iodides is presented here. Trisubstituted perfluoroalkenes can be obtained in a highly regio- and stereocontrolled manner by the simultaneous addition of both aryl and CnFm groups across the triple bond in a radical-mediated process. The reaction is operationally simple offering a broad scope and functional group tolerance.
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LA - eng
PT - Journal Article
DEP - 20150908
PL - United States
TA - J Am Chem Soc
JT - Journal of the American Chemical Society
JID - 7503056
SB - IM
EDAT- 2015/08/27 06:00
MHDA- 2015/08/27 06:00
CRDT- 2015/08/27 06:00
PHST- 2015/09/08 [aheadofprint]
AID - 10.1021/jacs.5b07432 [doi]
PST - ppublish
SO - J Am Chem Soc. 2015 Sep 16;137(36):11610-3. doi: 10.1021/jacs.5b07432. Epub 2015 Sep 8.

PMID- 26298605
OWN - NLM
STAT- In-Data-Review
DA - 20150908
IS - 1873-3778 (Electronic)
IS - 0021-9673 (Linking)
VI - 1413

DP - 2015 Sep 25

TI - Gas chromatography-tandem mass spectrometry with atmospheric pressure chemical ionization for fluorotelomer alcohols and perfluorinated sulfonamides determination.

PG - 107-16

LID - 10.1016/j.chroma.2015.08.016 [doi]

LID - S0021-9673(15)01165-6 [pii]

AB - Ionization and in source-fragmentation behavior of four fluorotelomer alcohols (FTOH) (4:2 FTOH, 6:2 FTOH, 8:2 FTOH and 10:2 FTOH) and four N-alkyl fluorooctane sulfonamides/-ethanols (N-MeFOSA, N-EtFOSA, N-MeFOSE and N-EtFOSE) by APCI has been studied and compared with the traditionally used EI and CI. Protonated molecule was the base peak of the APCI spectrum in all cases giving the possibility of selecting it as a precursor ion for MS/MS experiments. Following, CID fragmentation showed common product ions for all FOSAs/FOSEs (C4F7 and C3F5). Nevertheless, the different functionality gave characteristic pattern fragmentations. For instance, FTOHs mainly loss H₂O+HF, FOSAs showed the losses of SO₂ and HF while FOSEs showed the losses of H₂O and SO₂. Linearity, repeatability and LODs have been studied obtaining instrumental LODs between 1 and 5fg. Finally, application to river water and influent and effluent waste water samples has been carried out in order to investigate the improvements in detection capabilities of this new source in comparison with the traditionally used EI/CI sources. Matrix effects in APCI have been evaluated in terms of signal enhancement/suppression when comparing standards in solvent and matrix. No matrix effects were observed and concentrations found in samples were in the range of 1-100pgL(-1) far below the LODs achieved with methods previously reported. Unknown related perfluoroalkyl substances, as methyl-sulfone and methyl-sulfoxide analogues for FTOHs, were also discovered and tentatively identified.

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 PT - Journal Article
 DEP - 20150813
 PL - Netherlands
 TA - J Chromatogr A
 JT - Journal of chromatography. A
 JID - 9318488
 SB - IM
 OTO - NOTNLM
 OT - Atmospheric pressure chemical ionization
 OT - Fluorotelomer alcohols
 OT - Gas chromatography
 OT - Perfluorinated sulfonamides
 OT - Time-of-flight mass spectrometry
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 AID - S0021-9673(15)01165-6 [pii]
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 PMID- 26413802
 OWN - NLM
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 DA - 20150928
 LR - 20150929
 IS - 1095-8630 (Electronic)
 IS - 0301-4797 (Linking)
 VI - 165
 DP - 2015 Sep 25
 TI - Temporal trends of perfluoroalkyl substances in limed biosolids from a large municipal water resource recovery facility.
 PG - 88-95
 LID - S0301-4797(15)30275-9 [pii]
 LID - 10.1016/j.jenvman.2015.09.023 [doi]
 AB - While the recycling of wastewater biosolids via land-application is a sustainable practice for nutrient recovery and soil reclamation that has become increasingly common worldwide, concerns remain that this practice may become a source of toxic, persistent organic pollutants to the environment. This study concentrates on assessing the presence and the temporal trends of 12 perfluoroalkyl substances (PFASs), pollutants of global consequence, in limed Class B biosolids from a municipal water resource recovery facility (WRRF), also know as a wastewater

treatment plant. PFASs are of significant concern due to their extensive presence and persistence in environmental and biotic samples worldwide, most notably human blood samples. Class B biosolids were collected from the WRRF, prior to land-application, approximately every two to three months, from 2005 to 2013. Overall, this study found that concentrations of the 7 detectable PFAS compounds remained unchanged over the 8-year period, a result that is consistent with other temporal studies of these compounds in sewage sludges. From these analyzed compounds, the highest mean concentrations observed over the study period were 25.1 ng/g dw, 23.5 ng/g dw, and 22.5 ng/g dw for perfluorononanoic acid (PFNA), perfluorooctanoic acid (PFOA), and perfluorooctanesulfonic acid (PFOS), respectively, and these compounds were detected at concentrations 2.5–5 times higher than the remaining, detectable PFASs. Furthermore, it was observed that PFOS, while demonstrating no overall change during the study, exhibited a visible spike in concentration from late 2006 to early 2007. This study indicates that concentrations of PFASs in WRRFs have been stagnant over time, despite regulation. This study also demonstrates that the use of glass jars with polytetrafluoroethylene-lined lids, a common storage method for environmental samples, will not influence PFOA and PFNA concentrations in archived biosolids samples.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150925

TA - J Environ Manage

JT - Journal of environmental management

JID - 0401664

OTO - NOTNLM
OT - Biosolids
OT - Perfluorinated compounds
OT - Perfluoroalkyl substances
OT - Sewage sludge
OT - Storage
OT - Trends
EDAT- 2015/09/29 06:00
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AID - 10.1016/j.jenvman.2015.09.023 [doi]
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SO - J Environ Manage. 2015 Sep 25;165:88-95. doi: 10.1016/j.jenvman.2015.09.023.

PMID- 26378367
OWN - NLM
STAT- Publisher
DA - 20150917
LR - 20150918
IS - 1873-3336 (Electronic)
IS - 0304-3894 (Linking)
VI - 301
DP - 2015 Sep 8
TI - Evaluation of single and joint toxicity of perfluorooctane sulfonate and zinc to
Limnodrilus hoffmeisteri: Acute toxicity, bioaccumulation and oxidative stress.
PG - 342-349
LID - S0304-3894(15)30065-0 [pii]
LID - 10.1016/j.jhazmat.2015.09.010 [doi]
AB - Perfluorooctane sulfonate (PFOS) and zinc have been detected in aquatic
environment widely. In order to study the combined effects of PFOS and Zn, a
series of experiments was conducted to explore the acute mortality,
bioaccumulation and antioxidant status of Limnodrilus hoffmeisteri. The acute
toxicity was evaluated by calculating 24h-EC50 values, and it was observed that
24h-EC50 values in single and joint treatments decreased with decreasing pH value
or increasing exposure concentration. Toxic unit analysis suggested that the
combined effects of the PFOS+Zn binary mixture were mostly simple addition, with
8 groups showing synergism and only one group showing antagonism. The analysis of
internal Zn and PFOS concentration showed that the possible interaction between
Zn and PFOS can affect the bioaccumulation of the two chemicals in L.
hoffmeisteri. In addition, oxidative stress status was assessed by measuring
oxidation-related biochemical parameters such as superoxide dismutase,
glutathione peroxidase and malondialdehyde, and the integrated biomarker response
index was estimated to rank the toxicity order. Exposures to Zn and PFOS were
found to evoke some changes in the antioxidant defense system, and a strong

self-adaptive ability was noticed for *L. hoffmeisteri* after 10 d exposure.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150908

TA - J Hazard Mater

JT - Journal of hazardous materials

JID - 9422688

OTO - NOTNLM

OT - Acute toxicity

OT - Bioaccumulation

OT - Oxidative stress

OT - Perfluorooctane sulfonate

OT - Zinc

EDAT- 2015/09/18 06:00

MHDA- 2015/09/18 06:00

CRDT- 2015/09/18 06:00

PHST- 2015/06/02 [received]

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AID - S0304-3894(15)30065-0 [pii]

AID - 10.1016/j.jhazmat.2015.09.010 [doi]

PST - aheadofprint

SO - J Hazard Mater. 2015 Sep 8;301:342-349. doi: 10.1016/j.jhazmat.2015.09.010.

PMID- 26476317

OWN - NLM

STAT- Publisher

DA - 20151017

LR - 20151018

IS - 1873-3336 (Electronic)

IS - 0304-3894 (Linking)

VI - 302

DP - 2015 Sep 30

TI - In vivo DNA mismatch repair measurement in zebrafish embryos and its use in screening of environmental carcinogens.

PG - 296-303

LID - S0304-3894(15)30111-4 [pii]

LID - 10.1016/j.jhazmat.2015.09.056 [doi]

AB - Impairment of DNA mismatch repair (MMR) function leads to the development and progression of certain cancers. Many environmental contaminants can target DNA MMR system. Currently, measurement of MMR activity is limited to in vitro or in vivo methods at the cell line level, and reports on measurement of MMR activity at the live organism level are lacking. Here, we report an efficient method to measure DNA MMR activity in zebrafish embryos. A G-T mismatch was introduced into enhanced green fluorescent protein (EGFP) gene. Repair of the G-T mismatch to G-C in the heteroduplex plasmid generates a functional EGFP expression. The heteroduplex plasmid and a similarly constructed homoduplex plasmid were injected in parallel into the same batch of embryos at 1-cell stage and EGFP expression in EGFP positive embryos was quantified at 24h after injection. MMR efficiency was calculated as the total fluorescence intensity of embryos injected with the heteroduplex construct divided by that of embryos injected with the homoduplex construct. Our results showed 73% reduction of MMR activity in embryos derived from MMR-deficient *mlh1* mutant fish (positive control) when compared with embryos from MMR-competent wild type AB line fish, indicating feasibility of in vivo MMR activity measurement in zebrafish embryos. We further applied this novel assay for measurement of MMR efficiency in embryos exposed to environmental chemicals such as cadmium chloride (CdCl_2), benzo[a]pyrene (BaP), and perfluorooctanesulphonic acid (PFOS) from 6hpf to 24hpf. We observed significant reductions of MMR efficiency in embryos exposed to 0.1 μM CdCl_2 (52%) and 0.5 μM BaP (34%), but no effect in embryos exposed to PFOS. Our study for the first time provides a model system for in vivo measurement of DNA MMR activity at the organism level, which has important implications in risk assessment of various environmental carcinogens.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150930

TA - J Hazard Mater

JT - Journal of hazardous materials

JID - 9422688

OTO - NOTNLM

OT - BaP

OT - CdCl₂

OT - DNA mismatch repair

OT - Environmental carcinogens

OT - PFOS

OT - Zebrafish embryo

EDAT- 2015/10/18 06:00

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AID - S0304-3894(15)30111-4 [pii]

AID - 10.1016/j.jhazmat.2015.09.056 [doi]

PST - aheadofprint

SO - J Hazard Mater. 2015 Sep 30;302:296-303. doi: 10.1016/j.jhazmat.2015.09.056.

PMID- 25909497

OWN - NLM

STAT- In-Process

DA - 20150515

IS - 1873-3336 (Electronic)

IS - 0304-3894 (Linking)

VI - 295

DP - 2015 Sep 15

TI - Electrochemical treatment of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) in groundwater impacted by aqueous film forming foams (AFFFs).

PG - 170-5

LID - 10.1016/j.jhazmat.2015.04.024 [doi]

LID - S0304-3894(15)00306-4 [pii]

AB - Laboratory experiments were performed to evaluate the use of electrochemical treatment for the decomposition of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS), as well as other perfluoroalkyl acids (PFAAs), in aqueous film forming foam (AFFF)-impacted groundwater collected from a former firefighter training area and PFAA-spiked synthetic groundwater. Using a commercially-produced Ti/RuO₂ anode in a divided electrochemical cell, PFOA and PFOS decomposition was evaluated as a function of current density (0-20 mA/cm²). Decomposition of both PFOA and PFOS increased with increasing current density, although the decomposition of PFOS did not increase as the current density was increased above 2.5 mA/cm². At a current density of 10 mA/cm², the first-order rate constants, normalized for current density and treatment volume, for electrochemical treatment of both PFOA and PFOS were 46×10^{-5} and 70×10^{-5} [(min⁻¹) (mA/cm²)⁻¹ (L)], respectively. Defluorination was confirmed for both PFOA and PFOS, with 58% and 98% recovery as fluoride, respectively (based upon the mass of PFOA and PFOS degraded). Treatment of other PFAAs present in the groundwater also was observed, with shorter chain PFAAs generally being more recalcitrant. Results highlight the potential for electrochemical treatment of PFAAs, particularly PFOA and PFOS, in AFFF-impacted groundwater.

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LA - eng

PT - Journal Article

PT - Research Support, U.S. Gov't, Non-P.H.S.

DEP - 20150410
 PL - Netherlands
 TA - J Hazard Mater
 JT - Journal of hazardous materials
 JID - 9422688
 SB - IM
 OTO - NOTNLM
 OT - Electrochemical
 OT - PFOA
 OT - PFOS
 OT - Perfluorinated
 EDAT- 2015/04/25 06:00
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 PHST- 2015/03/27 [revised]
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 PHST- 2015/04/10 [aheadofprint]
 AID - S0304-3894(15)00306-4 [pii]
 AID - 10.1016/j.jhazmat.2015.04.024 [doi]
 PST - ppublish
 SO - J Hazard Mater. 2015 Sep 15;295:170-5. doi: 10.1016/j.jhazmat.2015.04.024. Epub
 2015 Apr 10.

 PMID- 26332883
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150903
 IS - 1557-2501 (Electronic)
 IS - 1042-3931 (Linking)
 VI - 27
 IP - 9
 DP - 2015 Sep
 TI - Closure of Long-Tunnel PFOs With the Coherex Flatstent EF - A Tailored Approach.
 PG - E190-5
 AB - AIMS: Despite rapid progress in device technologies for patent foramen ovale
 (PFO) closure over the past decade, long-tunnel anatomies still constitute a
 challenge. The present study investigated the performance of a novel in-tunnel
 device (Flatstent EF; Coherex Medical) in long-tunnel PFOs. METHODS AND RESULTS:
 Three different umbrella devices (n = 61) and the Coherex Flatstent (n = 27) were
 used for PFO closure. The Flatstent was the preferred device in long-tunnel
 anatomies. Seven patients with long PFO tunnels underwent "detunnelization" by
 stepwise inflation of a low-pressure balloon followed by implantation of an
 umbrella device. Complete occlusion or trivial residual shunting ("clinical"
 occlusion) was achieved in 93% of the Flatstent and 92% of the umbrella device
 procedures (P=.92). Device performance in long-tunnel anatomies was in favor of
 the Flatstent (n = 24) compared with conventional occluders (n = 7), with
 "clinical" occlusion of 96% vs 86% (P=.24) and procedure time of 44 +/- 16

minutes vs 59 +/- 21 minutes (P=.04). Furthermore, postprocedural arrhythmias were significantly less frequent after Flatstent implantations (0.0% vs 9.1%; P=.03). CONCLUSION: In long-tunnel PFOs, the Flatstent device was quicker to deploy, was at least as equally efficacious as umbrella devices, and reduced the incidence of symptomatic arrhythmias following PFO closure.

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LA - eng

PT - Journal Article

PL - United States

TA - J Invasive Cardiol

JT - The Journal of invasive cardiology

JID - 8917477

SB - IM

EDAT- 2015/09/04 06:00

MHDA- 2015/09/04 06:00

CRDT- 2015/09/03 06:00

PST - ppublish

SO - J Invasive Cardiol. 2015 Sep;27(9):E190-5.

PMID- 25382561

OWN - NLM

STAT- In-Data-Review

DA - 20150928

IS - 1476-4954 (Electronic)

IS - 1476-4954 (Linking)

VI - 28

IP - 18

DP - 2015 Dec

TI - Fetal growth and maternal glomerular filtration rate: a systematic review.

PG - 2176-81

LID - 10.3109/14767058.2014.980809 [doi]

AB - OBJECTIVE: Glomerular filtration rate (GFR) may influence concentrations of biomarkers of exposure and their etiologic significance in observational studies

of associations between environmental contaminants and fetal growth. It is unknown whether the size of a developing fetus affects maternal GFR such that a small fetus leads to reduced plasma volume expansion (PVE), reduced GFR and subsequent higher concentrations of biomarkers in maternal serum. Our objective was to answer the question: "Is there an association between fetal growth and maternal GFR in humans?" METHODS: We adapted and applied the Navigation Guide systematic review methodology to assess the evidence of an association between fetal growth and GFR, either directly or indirectly via reduction in PVE. RESULTS: We identified 35 relevant studies. We rated 31 human and two non-human observational studies as "low" quality and two experimental non-human studies as "very low" quality. We rated all three evidence streams as "inadequate". The association between fetal growth and GFR was "not classifiable" according to pre-specified definitions. CONCLUSIONS: There is currently insufficient evidence to support the plausibility of a reverse causality hypothesis for associations between exposure to environmental chemicals during pregnancy and fetal growth. Further research would be needed to confirm or disprove this hypothesis.

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 LA - eng
 PT - Journal Article
 DEP - 20150904
 PL - England
 TA - J Matern Fetal Neonatal Med
 JT - The journal of maternal-fetal & neonatal medicine : the official journal of the
 European Association of Perinatal Medicine, the Federation of Asia and Oceania
 Perinatal Societies, the International Society of Perinatal Obstetricians
 JID - 101136916
 SB - IM
 OTO - NOTNLM
 OT - Fetal growth
 OT - glomerular filtration rate
 OT - perfluorooctanoic acid
 OT - plasma volume expansion
 OT - reproductive environmental health
 OT - reverse causality
 OT - the navigation guide
 EDAT- 2014/11/11 06:00
 MHDA- 2014/11/11 06:00
 CRDT- 2014/11/11 06:00
 PHST- 2015/09/04 [aheadofprint]
 AID - 10.3109/14767058.2014.980809 [doi]
 PST - ppublish
 SO - J Matern Fetal Neonatal Med. 2015 Dec;28(18):2176-81. doi:
 10.3109/14767058.2014.980809. Epub 2015 Sep 4.

 PMID- 26301895
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150904
 IS - 1520-6904 (Electronic)
 IS - 0022-3263 (Linking)
 VI - 80
 IP - 17
 DP - 2015 Sep 4
 TI - Synthesis of Functionalized Perfluorinated Porphyrins for Improved Spin
 Switching.
 PG - 8496-500
 LID - 10.1021/acs.joc.5b01524 [doi]
 AB - We have established a method to synthesize perfluorinated meso-phenylporphyrins
 with one phenyl group bearing a substituent in the ortho position. These novel

electron-deficient porphyrins are interesting for model enzymes, catalysis, photodynamic therapy, and electron transfer. The key step is the synthesis of an iodine-substituted porphyrin and its Suzuki cross coupling with boronic acid derivatives. We applied the novel strategy to synthesize a highly electron-deficient, azopyridine-substituted Ni-porphyrin that undergoes an improved ligand-driven coordination-induced spin-state switch.

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LA - eng

PT - Journal Article

DEP - 20150825

PL - United States

TA - J Org Chem

JT - The Journal of organic chemistry

JID - 2985193R

SB - IM

EDAT- 2015/08/25 06:00

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PHST- 2015/08/25 [aheadofprint]

AID - 10.1021/acs.joc.5b01524 [doi]

PST - ppublish

SO - J Org Chem. 2015 Sep 4;80(17):8496-500. doi: 10.1021/acs.joc.5b01524. Epub 2015 Aug 25.

PMID- 26302372

OWN - NLM

STAT- In-Data-Review

DA - 20150919

IS - 1520-6904 (Electronic)

IS - 0022-3263 (Linking)

VI - 80

IP - 18

DP - 2015 Sep 18

TI - Stereochemical Investigation of the Products of the Photoinduced
Perfluoroalkylation-Dimerization of Anthracene.

PG - 9208-13

LID - 10.1021/acs.joc.5b01655 [doi]

AB - The photoinduced perfluoroalkylation of anthracene has been shown to provide 9,9',10,10'-tetrahydro-10,10'-diperfluoroalkyl-9,9'-bianthracenes in over 70% yields, each perfluoroalkyl iodide producing three diastereomers. The structures of all three diastereomers (cis,cis, cis,trans, and trans,trans isomers) have been elucidated by both NMR and X-ray crystallographic analyses. Most notably, an X-ray crystallographic analysis has revealed that the trans,trans diastereomer having the two trifluoromethyl groups in 10,10'-positions adopts a 74 degrees twisted relationship of the two dihydroanthracene rings. Furthermore, each of the two trans,trans isomers 2a,b has been shown to exist as a mixture of new types of atropisomers and the energy barrier for the interconversion of the two atropisomers has been estimated to be 12 kcal/mol by variable-temperature NMR analysis.

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LA - eng
PT - Journal Article
DEP - 20150831
PL - United States
TA - J Org Chem
JT - The Journal of organic chemistry
JID - 2985193R
SB - IM
EDAT- 2015/08/25 06:00
MHDA- 2015/08/25 06:00
CRDT- 2015/08/25 06:00
PHST- 2015/08/31 [aheadofprint]
AID - 10.1021/acs.joc.5b01655 [doi]
PST - ppublish
SO - J Org Chem. 2015 Sep 18;80(18):9208-13. doi: 10.1021/acs.joc.5b01655. Epub 2015 Aug 31.

PMID- 26095172
OWN - NLM
STAT- Publisher

DA - 20150817
 LR - 20150817
 IS - 1472-765X (Electronic)
 IS - 0266-8254 (Linking)
 VI - 61
 IP - 3
 DP - 2015 Sep
 TI - Development of a novel multiplex PCR assay for rapid detection of virulence associated genes of *Pasteurella multocida* from pigs.
 PG - 293-298
 LID - 10.1111/lam.12453 [doi]
 AB - As the pathogenicity of *Pasteurella multocida* is associated with various virulence factors (VFs), the aim of the study was to develop a novel multiplex PCR (m-PCR) assay for the rapid detection of important virulence associated genes (VAGs) of *P. multocida* isolates from pigs. The target recognized VFs used in the study were diverse adhesins (ptfA and pfhA), toxins (toxA), siderophores (tonB and hgbA), sialidases (nanB, nanH) and outer membrane proteins (ompA, ompH, oma87 and plpB). The primers for the genes encoding these VFs were designed by primer3 software (<http://bioinfo.ut.ee/primer3-0.4.0/>) using gene sequences available in Genbank. The detection limit of the developed assay was 102 CFU ml⁻¹. The m-PCR did not produce any nonspecific amplification products when tested against *Bordetella bronchiseptica* which also commonly infects pigs. We applied m-PCR to the field samples, and the results obtained were the same as the single PCR results. The developed assay would be very useful for veterinary diagnostic laboratories and for others interested in the rapid virulence profiling of porcine *P. multocida* isolates circulating in the piggeries. SIGNIFICANCE AND IMPACT OF THE STUDY: The study reports the development and evaluation of a novel multiplex PCR assay for the rapid detection of 11 important VAGs of *Pasteurella multocida* isolates from pigs. Rapid and simultaneous detection of recognized VFs of the organism are essential to know the virulo-types of *P. multocida* isolates circulating in the piggeries. The developed novel assay will be very useful for the rapid detection of VAGs of *P. multocida* isolates from pigs.
 CI - (c) 2015 The Society for Applied Microbiology.
 FAU - Rajkhowa, S
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 AD - National Research Centre on Pig, Indian Council of Agricultural Research, Guwahati, Assam, India.
 LA - ENG
 SI - GENBANK/U50907
 SI - GENBANK/U60439
 SI - GENBANK/NC_017027.1
 SI - GENBANK/EU408787.1
 SI - GENBANK/AY644678.1
 SI - GENBANK/AY035342
 SI - GENBANK/AE006158.1
 SI - GENBANK/NC_016808.1
 SI - GENBANK/AF274868
 SI - GENBANK/AF274869

SI - GENBANK/AF240778
 PT - JOURNAL ARTICLE
 DEP - 20150707
 TA - Lett Appl Microbiol
 JT - Letters in applied microbiology
 JID - 8510094
 OTO - NOTNLM
 OT - Pasteurella multocida
 OT - multiplex PCR
 OT - porcine
 OT - rapid detection
 OT - virulence associated genes
 EDAT- 2015/06/23 06:00
 MHDA- 2015/06/23 06:00
 CRDT- 2015/06/23 06:00
 PHST- 2015/04/04 [received]
 PHST- 2015/05/18 [revised]
 PHST- 2015/06/02 [accepted]
 PHST- 2015/07/07 [aheadofprint]
 AID - 10.1111/lam.12453 [doi]
 PST - ppublish
 SO - Lett Appl Microbiol. 2015 Sep;61(3):293-298. doi: 10.1111/lam.12453. Epub 2015 Jul 7.

 PMID- 26462249
 OWN - NLM
 STAT- PubMed-not-MEDLINE
 DA - 20151014
 DCOM- 20151014
 LR - 20151017
 IS - 1178-6361 (Electronic)
 IS - 1178-6361 (Linking)
 VI - 8
 IP - Suppl 2
 DP - 2015
 TI - The Effect of Perfluorooctane Sulfonate, Exposure Time, and Chemical Mixtures on Methanogenic Community Structure and Function.
 PG - 1-7
 LID - 10.4137/MBI.S31345 [doi]
 AB - A plethora of organic micropollutant mixtures are found in untreated municipal wastewater. Anaerobic digesters receive large loadings of hydrophobic micropollutants that sorb to wastewater biosolids. Despite micropollutants being pervasive as mixtures, little research is available to explain the impact that mixtures of compounds, as well as exposure time, have on microbial communities in anaerobic digesters. Perfluorooctane sulfonate (PFOS) was added to anaerobic enrichment cultures in both short-term (14 days) and long-term (140 days) studies to determine the impact of exposure time. Additionally, triclosan was added during the experiments to investigate the impact of mixtures on community

structure and function. PFOS did not alter methane production in short-term studies, but in long-term studies, methane production increased, consistent with our hypothesis that PFOS may act as a metabolic uncoupler. The impact of triclosan on methane production was exacerbated when PFOS was already present in the anaerobic enrichment cultures. Triclosan also had greater impacts on microbial community structures in the bottles that had been exposed to PFOS long-term. These results demonstrate that both chemical mixtures and exposure time are important parameters to address when trying to define the impacts of micropollutants on anaerobic microbial communities.

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LA - eng

PT - Journal Article

DEP - 20150928

PL - New Zealand

TA - Microbiol Insights

JT - Microbiology insights

JID - 101622216

PMC - PMC4589087

OID - NLM: PMC4589087

OTO - NOTNLM

OT - anaerobic digestion

OT - biogas

OT - emerging contaminants

OT - micropollutants

OT - perfluorooctane sulfonate

OT - triclosan

EDAT- 2015/10/16 06:00

MHDA- 2015/10/16 06:01

CRDT- 2015/10/14 06:00

PHST- 2015 [ecollection]

PHST- 2015/06/09 [received]

PHST- 2015/09/01 [revised]

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TI - Mechanistic details of energy transfer and soft landing in ala2-H(+) collisions with a F-SAM surface.

PG - 24576-86

LID - 10.1039/c5cp03214h [doi]

AB - Previous chemical dynamics simulations (Phys. Chem. Chem. Phys., 2014, 16, 23769-23778) were analyzed to delineate atomistic details for collision of N-protonated dialanine (ala2-H(+)) with a C8 perfluorinated self-assembled monolayer (F-SAM) surface. Initial collision energies E_i of 5-70 eV and incident angles θ_{tai} of 0 degrees and 45 degrees, with the surface normal, were considered. Four trajectory types were identified: (1) direct scattering; (2) temporary sticking/physisorption on top of the surface; (3) temporary penetration of the surface with additional physisorption on the surface; and (4) trapping on/in the surface, by physisorption or surface penetration, when the trajectory is terminated. Direct scattering increases from 12 to 100% as E_i is increased from 5 to 70 eV. For the direct scattering at 70 eV, at least one ala2-H(+) heavy atom penetrated the surface for all of the trajectories. For approximately 33% of the trajectories all eleven of the ala2-H(+) heavy atoms penetrated the F-SAM at the time of deepest penetration. The importance of trapping decreased with increase in E_i , decreasing from 84 to 0% with E_i increase from 5 to 70 eV at $\theta_{\text{tai}} = 0$ degrees. Somewhat surprisingly, the collisional energy transfers to the F-SAM surface and ala2-H(+) are overall insensitive to the trajectory type. The energy transfer to ala2-H(+) is primarily to vibration, with the transfer to rotation approximately 10% or less. Adsorption and then trapping of ala2-H(+) is primarily a multi-step process, and the following five trapping mechanisms were identified: (i) physisorption-penetration-physisorption (phys-pen-phys); (ii) penetration-physisorption-penetration (pen-phys-pen); (iii) penetration-physisorption (pen-phys); (iv) physisorption-penetration (phys-pen); and (v) only physisorption (phys). For $E_i = 5$ eV, the pen-phys-pen, pen-phys, phys-pen, and phys trapping mechanisms have similar probabilities. For 13.5 eV, the phys-pen mechanism, important at 5 eV, is unimportant. The radius of gyration of ala2-H(+) was calculated once it is trapped on/in the F-SAM surface and trapping decreases the ion's compactness, in part by breaking hydrogen bonds. The ala2-H(+) + F-SAM simulations are compared with the penetration and trapping dynamics found in previous simulations of projectile + organic surface collisions.

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 TA - Phys Chem Chem Phys
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 SO - Phys Chem Chem Phys. 2015 Sep 23;17(38):24576-86. doi: 10.1039/c5cp03214h.

 PMID- 26356420
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150911
 LR - 20150919
 IS - 1932-6203 (Electronic)
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 DP - 2015
 TI - Perfluoroalkyl Acid Concentrations in Blood Samples Subjected to Transportation
 and Processing Delay.
 PG - e0137768
 LID - 10.1371/journal.pone.0137768 [doi]
 AB - BACKGROUND: In studies of perfluoroalkyl acids, the validity and comparability of
 measured concentrations may be affected by differences in the handling of
 biospecimens. We aimed to investigate whether measured plasma levels of
 perfluoroalkyl acids differed between blood samples subjected to delay and
 transportation prior to processing and samples with immediate processing and
 freezing. METHODS: Pregnant women recruited at Aarhus University Hospital,
 Denmark, (n = 88) provided paired blood samples. For each pair of samples, one
 was immediately processed and plasma was frozen, and the other was delayed and
 transported as whole blood before processing and freezing of plasma (similar to
 the Danish National Birth Cohort). We measured 12 perfluoroalkyl acids and
 present results for compounds with more than 50% of samples above the lower limit

of quantification. RESULTS: For samples taken in the winter, relative differences between the paired samples ranged between -77 and +38% for individual perfluoroalkyl acids. In most cases concentrations were lower in the delayed and transported samples, e.g. the relative difference was -29% (95% confidence interval -30; -27) for perfluorooctane sulfonate. For perfluorooctanoate there was no difference between the two setups [corresponding estimate 1% (0, 3)]. Differences were negligible in the summer for all compounds. CONCLUSIONS: Transport of blood samples and processing delay, similar to conditions applied in some large, population-based studies, may affect measured perfluoroalkyl acid concentrations, mainly when outdoor temperatures are low. Attention to processing conditions is needed in studies of perfluoroalkyl acid exposure in humans.

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 IS - 1879-1026 (Electronic)
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 TI - Organohalogenated contaminants in white-tailed eagle (*Haliaeetus albicilla*)
 nestlings: An assessment of relationships to immunoglobulin levels, telomeres and
 oxidative stress.
 PG - 337-49
 LID - 10.1016/j.scitotenv.2015.08.123 [doi]
 LID - S0048-9697(15)30625-2 [pii]
 AB - Biomagnifying organohalogenated compounds (OHCs) may have adverse effects on the
 health of birds, especially marine avian top predators that accumulate high OHC
 loads. Contaminants may impair the humoral immunity and also influence the
 antioxidant enzyme activity (i.e. oxidative stress). Moreover, physical
 conditions and oxidative stress during development may reduce telomere lengths,
 one of the main mechanisms explaining cell senescence. To examine the potential
 effects of environmental contaminants on physiological biomarkers of health, OHCs
 with different 'physicochemical' properties were related to immunoglobulin Y
 levels (IgY; humoral immunity), superoxide dismutase enzyme (SOD) activity in
 blood plasma, and telomere length (measured in red blood cells) in individual
 7-8weeks old nestlings (n=35) of white-tailed eagles (*Haliaeetus albicilla*) in
 the Norwegian Sub-Arctic. Different organochlorines (OCs) and perfluoroalkylated
 substances (PFASs) were measured in blood plasma of nestlings, demonstrating
 higher concentrations of the emerging contaminants (PFASs), notably
 perfluorooctane sulfonate (PFOS), compared to legacy OCs. There were no
 relationships between the contaminant loads and plasma IgY levels. Moreover,
 differences between years were found for telomere lengths, but this was not
 related to contaminants and more likely a result of different developmental
 conditions. However, there were significant and negative relationships between
 the OC loadings and the SOD activity. This suggests that some legacy OCs

challenge the antioxidant capacity in nestlings of white-tailed eagles.

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PT - Journal Article

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TA - Sci Total Environ

JT - The Science of the total environment

JID - 0330500

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OTO - NOTNLM

OT - Organochlorines

OT - Oxidative stress
 OT - Perfluoroalkyl substances
 OT - Plasma immunoglobulin Y
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 TI - Temporal trends for inflow of perfluorooctanesulfonate (PFOS) and
 perfluorooctanoate (PFOA) to Tokyo Bay, Japan, estimated by a receptor-oriented
 approach.
 PG - 277-85
 LID - 10.1016/j.scitotenv.2015.08.142 [doi]
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 AB - We estimated inflow rates of perfluorooctanesulfonate (PFOS) and
 perfluorooctanoate (PFOA) to Tokyo Bay, Japan, between February 2004 and February
 2011 by a receptor-oriented approach based on quarterly samplings of the bay
 water. Temporal trends in these inflow rates are an important basis for
 evaluating changes in PFOS and PFOA emissions in the Tokyo Bay catchment basin. A
 mixing model estimated the average concentrations of these compounds in the
 freshwater inflow to the bay, which were then multiplied by estimated freshwater
 inflow rates to obtain the inflow rates of these compounds. The receptor-oriented
 approach enabled us to comprehensively cover inflow to the bay, including inflow
 via direct discharge to the bay. On a logarithmic basis, the rate of inflow for
 PFOS decreased gradually, particularly after 2006, whereas that for PFOA
 exhibited a marked stepwise decrease from 2006 to 2007. The rate of inflow for
 PFOS decreased from 730kg/y during 2004-2006 to 160kg/y in 2010, whereas that for
 PFOA decreased from 2000kg/y during 2004-2006 to 290kg/y in 2010. These
 reductions probably reflected reductions in the use and emission of these
 compounds and their precursors in the Tokyo Bay catchment basin. Our estimated

per-person inflow rates (i.e., inflow rates divided by the estimated population in the basin) for PFOS were generally comparable to previously reported per-person waterborne emission rates in Japan and other countries, whereas those for PFOA were generally higher than previously reported per-person waterborne emission rates. A comparison with previous estimates of household emission rates of these compounds suggested that our inflow estimates included a considerable contribution from point industrial sources.

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TA - Sci Total Environ
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OTO - NOTNLM
OT - Catchment basin
OT - Emission source
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TI - Perfluoroalkyl substances assessment in drinking waters from Brazil, France and Spain.

PG - 143-52

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AB - Human exposure to perfluoroalkyl substances (PFASs) occurs primarily via dietary intake and drinking water. In this study, 16 PFASs have been assessed in 96 drinking waters (38 bottled waters and 58 samples of tap water) from Brazil, France and Spain. The total daily intake and the risk index (RI) of 16 PFASs through drinking water in Brazil, France and Spain have been estimated. This study was carried out using an analytical method based on an online sample enrichment followed by liquid chromatography coupled to tandem mass spectrometry (LC-MS/MS). The quality parameters of the analytical method were satisfactory for the analysis of the 16 selected compounds in drinking waters. Notably, the method limits of detection (MLOD) and method limits of quantification (MLOQ) were in the range of 0.15 to 8.76ng/l and 0.47 to 26.54ng/l, respectively. The results showed that the highest PFASs concentrations were found in tap water samples and the more frequently found compound was perfluorooctanesulfonic acid (PFOS), with mean concentrations of 7.73, 15.33 and 15.83ng/l in French, Spanish and Brazilian samples, respectively. In addition, PFOS was detected in all tap water samples from Brazil. The highest level of PFASs contamination in a single sample was 140.48ng/l in a sample of Spanish tap water. In turn, in bottled waters the highest levels were detected in a French sample with 116ng/l as the sum of PFASs. Furthermore, the most frequent compounds and those at higher concentrations were perfluoroheptanoic acid (PFHpA) with a mean of frequencies in the three countries of 51.3%, followed by perfluorobutanesulfonic acid (PFBS) (27.2%) and perfluorooctanoic acid (PFOA) (23.0%). Considering that bottled water is approximately 38% of the total intake, the total PFASs exposure through drinking water intake for an adult man was estimated to be 54.8, 58.0 and 75.6ng/person per day in Spain, France and Brazil, respectively. However, assuming that the water content in other beverages has at least the same levels of contamination as in bottled drinking water, these amounts were increased to 72.2, 91.4 and 121.0ng/person per day for an adult man in Spain, France and Brazil, respectively. The results of total daily intake in different gender/age groups showed that children are the most exposed population group through hydration with maximum values in Brazil of 2.35 and 2.01ng/kg body weight (BW)/day for male and female, respectively. Finally, the RI was calculated. In spite of the highest values being found in Brazil, it was demonstrated that, in none of the investigated countries, drinking water pose imminent risk associated with PFASs contamination.

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DP - 2015 Sep 24
TI - Use of Fenton reagent combined with humic acids for the removal of PFOA from
contaminated water.
LID - S0048-9697(15)30704-X [pii]

LID - 10.1016/j.scitotenv.2015.09.044 [doi]

AB - Perfluorinated compounds (PFCs) are receiving significant attention due to its global distribution, high persistence, and bioaccumulation properties. Among them, perfluorooctanoic acid (PFOA) is one of the most commonly found in the environment. The strong bond C-F in PFOA is extremely difficult to degrade, therefore advanced oxidation processes (AOPs) at room temperature and pressure are not able to oxidize them, as was noticed here using Fenton like reagent (FR) or persulfate (PS) at 25 degrees C. On the contrary, by using persulfate activated by heat (100mM and T=70 degrees C) a complete defluorination of PFOA 0.1mM was noticed after 18h, with a sequential degradation mechanism of losing one CF₂ unit from PFOA and its intermediates (perfluoroheptanoic acid (PFHpA), perfluorohexanoic acid (PFHxA), perfluoropentanoic acid (PFPA) and perfluorobutanoic acid (PFBA)). Since this thermal treatment is not usually desirable from an economical point of view, alternative process has been tested. For this scope, a hybrid process is proposed in this work, by adding humic acid, HA, (600mgL⁻¹) and FR, (165mM in H₂O₂ and 3mM in Fe³⁺) to the 0.1mM PFOA solution. It was found that the HA was oxidized by FR. PFOA was entrapped quantitatively and irreversibly during HA oxidation, resulting PFOA non-available to the aqueous phase. Oxidized HA with PFOA entrapped precipitates. Both, the leftover Fe(III) acting as a coagulant and neutral pH enhance the separation of this solid phase. The precipitation noticed by adding HA to the PFOA solution in absence of FR was negligible.

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OT - Perfluorooctanoic acid (PFOA)
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TI - Contamination risk of raw drinking water caused by PFOA sources along a river
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 TA - Sci Total Environ
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 OTO - NOTNLM
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 OT - Risk assessment
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 AID - S0048-9697(15)30667-7 [pii]
 AID - 10.1016/j.scitotenv.2015.09.008 [doi]
 PST - aheadofprint
 SO - Sci Total Environ. 2015 Sep 21;541:74-82. doi: 10.1016/j.scitotenv.2015.09.008.

 PMID- 25918891
 OWN - NLM
 STAT- MEDLINE
 DA - 20150605
 DCOM- 20150918
 IS - 1879-1026 (Electronic)
 IS - 0048-9697 (Linking)
 VI - 526
 DP - 2015 Sep 1
 TI - Delivery of unprecedented amounts of perfluoroalkyl substances towards the deep-sea.
 PG - 41-8
 LID - 10.1016/j.scitotenv.2015.04.080 [doi]
 LID - S0048-9697(15)30014-0 [pii]
 AB - The finding of perfluoroalkyl substances (PFASs) in particles sinking to the deep northwestern Mediterranean Sea confirms the role of the latter as ballast for the transfer of pollutants to the deep sea. The transfer of particulate matter down to the deep is enhanced during atmosphere-driven, high-energy physical oceanographic processes like dense shelf water cascading (DSWC), which is caused by winter surface heat losses and evaporation. Here we present data from samples

collected during winter 2012, when dense shelf water formation and subsequent cascading triggered the flushing of large amounts of PFASs through a submarine canyon to depths in excess of 1000 m. The finding of quantifiable concentrations of long-chain PFOA, PFOS and PFNA substances and significantly high concentrations of the short-chain substances PFHxA and PFBA indicates that these compounds, sorbed onto particulate matter, are quickly and directly transferred to the ocean's interior, thus highlighting the role of DSWC in removing those pollutants from the coastal ocean. Eventually, uncertainties about our results arising from the limited number of samples available are counterbalanced by their intrinsic value as intense DSWC events, like the one in 2012, occur only every 5-7 years in the study area, which seriously restricts sampling opportunities. Our results add PFASs to the list of persistent organic pollutants like polychlorinated biphenyls, chlorobenzenes or polycyclic aromatic hydrocarbons known to be conveyed to the deep marine environment.

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LA - eng

PT - Journal Article

PT - Research Support, Non-U.S. Gov't

DEP - 20150425

PL - Netherlands
 TA - Sci Total Environ
 JT - The Science of the total environment
 JID - 0330500
 RN - 0 (Fluorocarbons)
 RN - 0 (Water Pollutants, Chemical)
 SB - IM
 MH - Environmental Monitoring/methods
 MH - Fluorocarbons/*analysis
 MH - Geologic Sediments
 MH - Seawater/*chemistry
 MH - Water Pollutants, Chemical/*analysis
 OTO - NOTNLM
 OT - Deep sea
 OT - Dense shelf water cascading
 OT - Perfluoroalkyl substances
 OT - Settling particles
 EDAT- 2015/04/29 06:00
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 PHST- 2015/04/20 [revised]
 PHST- 2015/04/21 [accepted]
 PHST- 2015/04/25 [aheadofprint]
 AID - S0048-9697(15)30014-0 [pii]
 AID - 10.1016/j.scitotenv.2015.04.080 [doi]
 PST - ppublish
 SO - Sci Total Environ. 2015 Sep 1;526:41-8. doi: 10.1016/j.scitotenv.2015.04.080.
 Epub 2015 Apr 25.

 PMID- 26252803
 OWN - NLM
 STAT- In-Data-Review
 DA - 20150902
 IS - 1744-6848 (Electronic)
 IS - 1744-683X (Linking)
 VI - 11
 IP - 36
 DP - 2015 Sep 28
 TI - Faceted fatty acid vesicles formed from single-tailed perfluorinated surfactants.
 PG - 7143-50
 LID - 10.1039/c5sm01494h [doi]
 AB - The aggregation behavior and rheological properties of two mixtures of perfluorononanoic acid (PFNA)/NaOH and perfluorodecanoic acid (PFDA)/NaOH were investigated in aqueous solutions. Interestingly, pH-sensitive polyhedral fatty acid vesicles were spontaneously formed in both systems, which were determined by freeze-fracture transmission electron microscopy (FF-TEM) measurements. Especially, a phase transition from faceted vesicles to the L3 phase with the

increase of pH was observed in the PFNA/NaOH system while it was not observed in the PFDA/NaOH system. Differential scanning calorimetry (DSC) and wide angle X-ray scattering (WAXS) measurements confirmed that the bilayers of the faceted vesicles were in the crystalline station indicating that the crystallization of fluorocarbon chains was the main driving force for their formation. Besides, the two systems of faceted perfluorofatty acid vesicles exhibit interesting rheological properties, for instance, they showed high viscoelasticity and shear-thinning behaviour, and the elastic modulus (G') and viscous modulus (G'') of PFDA/NaOH vesicles were much higher than those of PFNA/NaOH vesicles. Conversely, the solution of the L3 phase with fluid bilayers did not present viscoelastic properties. Therefore, the viscoelastic properties of vesicles resulted from the crystalline fluorinated alkyl chains with high rigidity at room temperature and the dense packing of vesicles. As far as we know, such faceted fatty acid vesicles formed from single-tailed perfluorinated surfactants have been rarely reported. Our work successfully constructs polyhedral fatty acid vesicles and proposes their formation mechanism, which should be a great advance in the fundamental research of fatty acid vesicles.

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FAU - Yang, Zihao

AU - Yang Z

LA - eng

PT - Journal Article

DEP - 20150807

PL - England

TA - Soft Matter

JT - Soft matter

JID - 101295070

SB - IM

EDAT- 2015/08/08 06:00

MHDA- 2015/08/08 06:00

CRDT- 2015/08/08 06:00

PHST- 2015/08/07 [aheadofprint]

PHST- 2015/09/02 [epublish]

AID - 10.1039/c5sm01494h [doi]

PST - ppublish

SO - Soft Matter. 2015 Sep 28;11(36):7143-50. doi: 10.1039/c5sm01494h. Epub 2015 Aug 7.

PMID- 26364926

OWN - NLM

STAT- Publisher

DA - 20150914

LR - 20150915

IS - 1744-6848 (Electronic)

IS - 1744-683X (Linking)

DP - 2015 Sep 14

TI - Fluorous 'ponytails' lead to strong gelators showing thermally induced structure evolution.

AB - Appending perfluoroalkyl substituents to bis(urea) gelators results in significantly decreased inter-chain interactions with markedly thinner fibres and hence more cross-linked and more transparent gels with potential applications in the crystallisation of fluorinated pharmaceuticals. Gel structure has been probed by detailed SANS measurements which indicate a surprising structure evolution on thermal cycling, not seen for hydrocarbon analogues. The SANS data are complemented by the single crystal X-ray structure of one fluorinated gelator.

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LA - ENG

PT - JOURNAL ARTICLE

DEP - 20150914

TA - Soft Matter

JT - Soft matter

JID - 101295070

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CRDT- 2015/09/15 06:00

AID - 10.1039/c5sm01865j [doi]

PST - aheadofprint

SO - Soft Matter. 2015 Sep 14.

PMID- 26358002

OWN - NLM

STAT- Publisher

DA - 20150930

LR - 20150930

IS - 1096-0929 (Electronic)

IS - 1096-0929 (Linking)

DP - 2015 Sep 9

TI - Chronic Exposure of Female Mice to an Environmental Level of Perfluorooctane Sulfonate Suppresses Estrogen Synthesis Through Reduced Histone H3K14 Acetylation of the StAR Promoter Leading to Deficits in Follicular Development and Ovulation.

LID - kfv197 [pii]

AB - Perfluorooctane sulfonate (PFOS) at a high dose of 10 mg/kg has been reported to affect the neuroendocrine system and exert toxic effects in rodents. The present study examined the influence of chronic exposure to a low-dose of PFOS (0.1 mg/kg/day) on female reproductive endocrine and function. Herein, we show that adult female mice exposed to PFOS by gavage for 4 months (PFOS-mice) exhibited a prolongation of diestrus without signs of toxic effects. The numbers of mature follicles and corpora luteum were significantly reduced in PFOS-mice with increase of atresic follicles. The levels of serum estrogen (E2) and progesterone at proestrus and diestrus were reduced in PFOS-mice. In comparison with controls, PFOS-mice showed a significant decrease in the levels of luteinizing hormone (LH) and follicle stimulating hormone (FSH), and gonadotrophin-releasing hormone, the number of kisspeptin neurons and the level of kiss1 mRNA in anteroventral periventricular nucleus at proestrus but not at diestrus, which could be corrected with the normalization to E2. PFOS-mice did not generate an LH-surge at proestrus, which could be rescued by the application of E2 or kisspeptin-10. Notably, the level of ovarian steroidogenic acute regulatory (StAR) mRNA was decreased in PFOS-mice with the reduction of histone H3K14 acetylation in StAR promoter relative to control mice, whereas the P450scc expression and histone H3K14 acetylation showed no difference between the groups. The present study provides evidence that the chronic exposure to the low-dose of PFOS through selectively reducing histone acetylation of StAR suppresses the biosynthesis of E2 to impair the follicular development and ovulation.

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 LA - ENG
 PT - JOURNAL ARTICLE
 DEP - 20150909
 TA - Toxicol Sci
 JT - Toxicological sciences : an official journal of the Society of Toxicology
 JID - 9805461
 OTO - NOTNLM
 OT - estrogen (E2)
 OT - histone acetylation
 OT - hypothalamic-pituitary-gonadal (HPG) axis
 OT - perfluorooctane sulfonate (PFOS)
 OT - steroidogenic acute regulatory (StAR)
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 MHDA- 2015/09/12 06:00
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 PHST- 2015/09/09 [aheadofprint]
 AID - kfv197 [pii]
 AID - 10.1093/toxsci/kfv197 [doi]
 PST - aheadofprint
 SO - Toxicol Sci. 2015 Sep 9. pii: kfv197.

 PMID- 26005784
 OWN - NLM
 STAT- In-Process
 DA - 20150613
 IS - 1879-2448 (Electronic)
 IS - 0043-1354 (Linking)
 VI - 80
 DP - 2015 Sep 1
 TI - Isomeric specific partitioning behaviors of perfluoroalkyl substances in water dissolved phase, suspended particulate matters and sediments in Liao River Basin and Taihu Lake, China.
 PG - 235-44
 LID - 10.1016/j.watres.2015.04.032 [doi]
 LID - S0043-1354(15)00269-9 [pii]
 AB - The occurrence and distribution of eleven perfluoroalkyl substances (PFASs) and the isomers of perfluorooctanoate (PFOA), perfluorooctanesulfonate (PFOS) and

perfluorooctane sulfonamide (PFOSA) were investigated in water dissolved phase, sediment and suspended particulate matter (SPM) in two typical watersheds in China: Liao River Basin and Taihu Lake. The total concentrations of the PFASs in the dissolved phase were 44.4–781 ng/L in Liao River with high contribution of perfluorobutane sulfonate (PFBS) (75.7%) and PFOA (9.86%). The summation of PFASs in the dissolved phase in Taihu Lake was 17.2–94.4 ng/L with PFOA (39.8%), perfluorohexanoate (PFHxA) (30.1%) and PFOS (16.8%) as the dominant PFASs. The log K_{oc} values of the PFASs in both SPM and sediment increased with increasing the perfluorinated carbon chain length. In Liao River Basin, the long chain perfluorocarboxylates (C₁₀–12) bound with SPM contributed >30% to the total amount in water, suggesting that SPM could not be ignored when the environmental load of long chain PFASs in water was assessed. For the isomers of PFOA, PFOS and PFOSA, the linear isomers always displayed higher partition coefficients on particulate phases than the branched ones. An established isomer-profiling technique was applied to assess the relative contributions of various industrial origins for PFOA. In Liao River, when SPM was included in the water samples, there were contributions of PFOA from electrochemical fluorination (ECF) (approximately 55%), linear telomer (approximately 41%) and isopropyl telomer (approximately 4%) sources. While, the results based on the dissolved phase alone indicated more contribution of ECF (approximately 70%) source and lower contribution from linear telomer (approximately 26%) source. The discrepancy suggests that omitting SPM from water samples might lead to misunderstanding on the industrial origins of PFOA. In Taihu Lake, the isomer profile of PFOA was influenced mainly by ECF (approximately 88%) and partially by linear-telomer (approximately 12%) sources.

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LA - eng

PT - Journal Article

PT - Research Support, Non-U.S. Gov't

DEP - 20150514

PL - England

TA - Water Res

JT - Water research

JID - 0105072

SB - IM

OTO - NOTNLM

OT - Isomers

OT - Partition

OT - Perfluoroalkyl substances

OT - Suspended matters

OT - Telomer

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AID - 10.1016/j.watres.2015.04.032 [doi]

PST - ppublish

SO - Water Res. 2015 Sep 1;80:235-44. doi: 10.1016/j.watres.2015.04.032. Epub 2015 May 14.